Vantage Access

Auto Configuration Server

User's Guide

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Edition 1

www.zyxel.com

About This User's Guide

Intended Audience

This manual is intended for people who want to remotely manage multiple ZyXEL compatible devices using Vantage Access. You should have at least a basic knowledge of TCP/IP networking concepts and topology, network administration and ZyXEL compatible device features.

Related Documentation

- Quick Start Guide

  The Quick Start Guide is designed to help you get up and running right away. It contains information on installing Vantage Access, initial setup and ZyXEL compatible device registration.
- Web Configurator Online Help

  Embedded web help for descriptions of individual screens and supplementary information.
- Supporting Disc

  Refer to the included CD for support documents.
- ZyXEL Web Site

  Please refer to www.zyxel.com for additional support documentation and product certifications.

User Guide Feedback

Help us help you. Send all User Guide-related comments, questions or suggestions for improvement to the following address, or use e-mail instead. Thank you!

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Document Conventions

Warnings and Notes

These are how warnings and notes are shown in this User's Guide.

Warnings tell you about things that could harm you or your device.

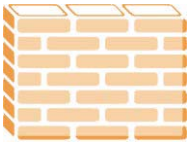
Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.

Syntax Conventions

- The Vantage Access Central Network Management may be referred to as the "Vantage Access", the "Vantage Access server" or the "system" in this User's Guide.
- A managed TR-069/TR-104 compliant device may be referred to as the "managed device" or, simply, as the "device" in this User's Guide.
- Product labels, screen names, field labels and field choices are all in **bold** font.
- A key stroke is denoted by square brackets and uppercase text, for example, [ENTER] means the "enter" or "return" key on your keyboard.
- "Enter" means for you to type one or more characters and then press the [ENTER] key. "Select" or "choose" means for you to use one of the predefined choices.
- A right angle bracket (>) within a screen name denotes a mouse click. For example, **Maintenance > Log > Log Setting** means you first click **Maintenance** in the navigation panel, then the **Log** sub menu and finally the **Log Setting** tab to get to that screen.
- Units of measurement may denote the "metric" value or the "scientific" value. For example, "k" for kilo may denote "1000" or "1024", "M" for mega may denote "1000000" or "1048576" and so on.
- "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".

Icons Used in Figures

Figures in this User's Guide may use the following generic icons. The Vantage Access icon is not an exact representation of your device.

Computer	Notebook computer	Server
DSLAM	Firewall 	Telephone
Switch	Router	

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PART I Introduction

This part contains the following chapters.

- Introducing Vantage Access (51)
- Installation (53)
- The Web Configurator (75)
- Initial Setup (93)

1

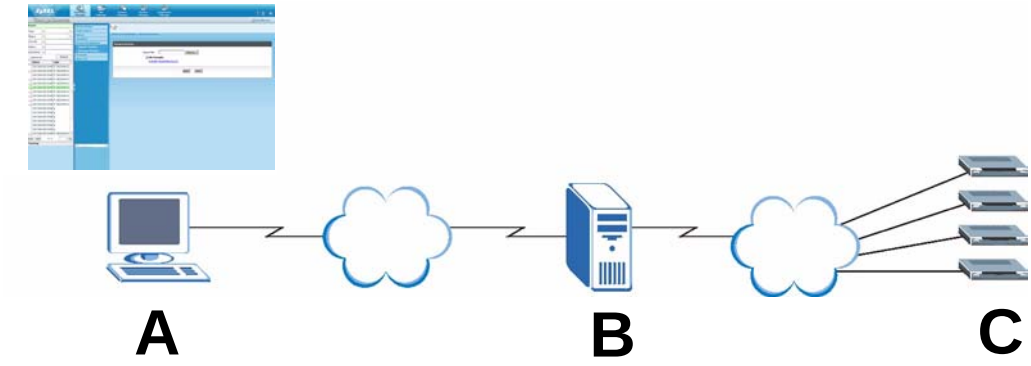
Introducing Vantage Access

This chapter introduces Vantage Access and its key features. Refer to the Quick Start Guide for setup requirements, installation, and access.

1.1 Overview

Vantage Access is a web-based management tool that allows you to remotely management, control and monitor devices which support the TR-069, TR-098, TR-104, TR-106, TR-111 and TR-135 protocols (from ZyXEL or other vendors). The following figure shows a typical network example.

Figure 1 Vantage Access Application Example



In this example, you use a computer (**A**) to log into the web configurator on the Vantage Access server (**B**), also known as the Auto-Configuration Server (ACS). You also need to configure the devices (**C**) to update their status to the Vantage Access server. Once the Vantage Access server collects this information, you can

- monitor device status.
- examine device and system logs or events.
- manage multiple devices at a time (for example, remote firmware upgrade, configuration changes, etc).
- set the Vantage Access server to perform scheduled firmware upgrades on the managed device(s).

1.2 Key Features

This section describes the main features of Vantage Access.

Remote Device Management

You can remotely manage compatible devices through Vantage Access. In addition, you can set Vantage Access to update service provision parameters (such as the WAN connection type, IP address, etc). Changes can be applied to more than one ZyXEL device.

Device Firmware Upgrades

Batch download device firmware from Vantage Access (after downloading the firmware from a web site) to multiple devices located anywhere, minimizing time, effort and room for error as well as ensuring firmware consistency across devices. Batch upgrades can be scheduled using the upgrade scheduler. Device owners can be notified automatically and reports can be generated detailing any device's firmware upload history.

Device Monitors and Logs

Monitor the status of all your devices in one application. You can also look at the logs for all your devices in Vantage Access. Configuration changes logs are also stored for future reference.

Statistical Reports

Stores reports for historical analysis. These reports include device registration logs, firmware upgrade history logs and access logs.

File Management and Data Maintenance

You can backup Vantage Access database (containing the device information) and restore them later.

Multiple Administration Level

Vantage Access provides different login account types (root, manager and call center) that allow separation of system, device and user management.

2

Installation

This chapter shows you how to install the Vantage Access and register a ZyXEL device.

2.1 Installation Overview

Vantage Access consists of three packages: DB, BED and HTTPD. You can install these packages on different or the same server.

- DB: This is the embedded MySQL database server of Vantage Access.
- BED: BED comprises the protocol suite that is used to manage compatible devices, an Apache server and a watchdog service.
- HTTPD: This is the download server HTTP Daemon used for firmware and configuration file transfer.

As Vantage Access comes with its own Apache HTTP server (for the download server) and MySQL database server, it is recommended that you install Vantage Access on a new Linux computer. If you plan to install Vantage Access on an existing Linux computer, you must uninstall Apache and MySQL from that server; otherwise they will conflict with Vantage Access.

2.1.1 Installation Method

You can install Vantage Access using one of the following methods.

- Wizard screens

  The user friendly wizard screens are the recommended way to install Vantage Access. You must log into your Linux computer in graphical mode (such as GNOME or KDE).
- Text-based line command

  If your Linux computer does not support graphical mode, use line commands for the installation. This is only recommended for advanced network administrators.

2.1.2 Minimum System Requirements

For the Vantage Access server:

- CPU: Dual Intel Xeon 3.0 GHz
- Memory: 4 GB
- Hard Disk: 80 GB
- Operating System: Red Hat Enterprise Linux ES 3

For a Vantage Access client:

- CPU: Compatible Intel Pentium 450 MHz
- Memory: 256 MB
- Hard Disk: 2 GB
- Web Browser: Internet Explorer 6.0
- Flash Player: Flash 9.0
- Screen Resolution: 1024 x 768 pixels

2.2 Preparing to Install

Follow the steps below to copy the installation files to the computer(s).

1. Log into the Linux computer as a root user
2. Insert the Vantage Access CD into the CD-ROM and copy the installation files (.bin) from the Vantage Access CD to a directory in your computer (for example, `./Home/Access`).

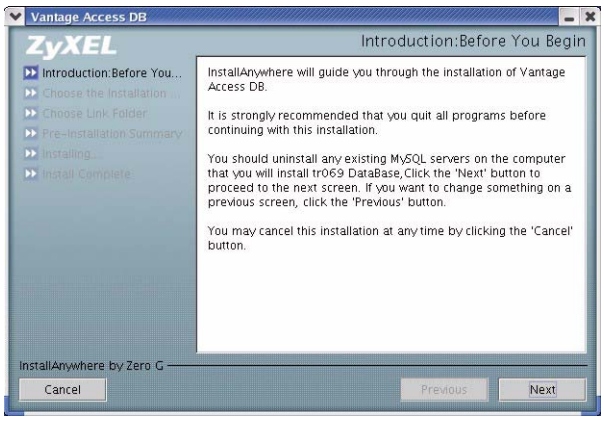
You must install Vantage Access DB first.

2.3 Installation Using the Wizard Screens

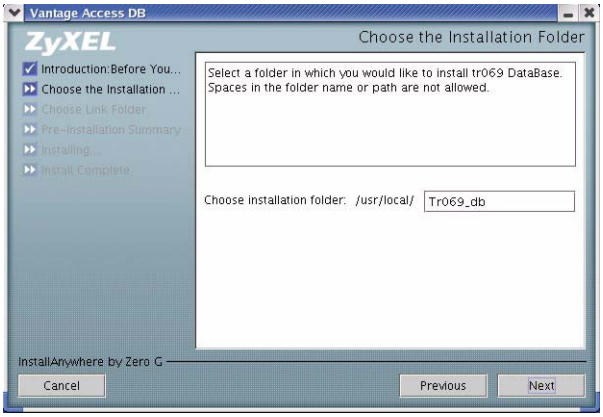
This section shows you how to install Vantage Access using the wizard screens.

2.3.1 Installing Vantage Access DB

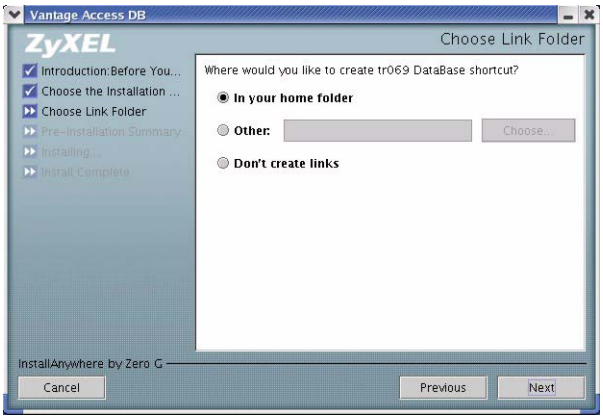
1. In the folder where you stored the installation file, enter `chmod +x Vantage_Access_DB.bin` to set it to be executable.
2. Enter `./Vantage_Access_DB.bin` to start the installation process.
3. The wizard screen displays. Click **Next** in each screen to continue.


Vantage Access DB
ZyXEL
Introduction:Before You Begin
Introduction:Before You...
Choose the Installation ...
Choose Link Folder
Pre-Installation Summary
Installing...
Install Complete
InstallAnywhere will guide you through the installation of Vantage Access DB.
It is strongly recommended that you quit all programs before continuing with this installation.
You should uninstall any existing MySQL servers on the computer that you will install tr069 DataBase,Click the 'Next' button to proceed to the next screen. If you want to change something on a previous screen, click the 'Previous' button.
You may cancel this installation at any time by clicking the 'Cancel' button.
InstallAnywhere by Zero G
Cancel
Previous
Next

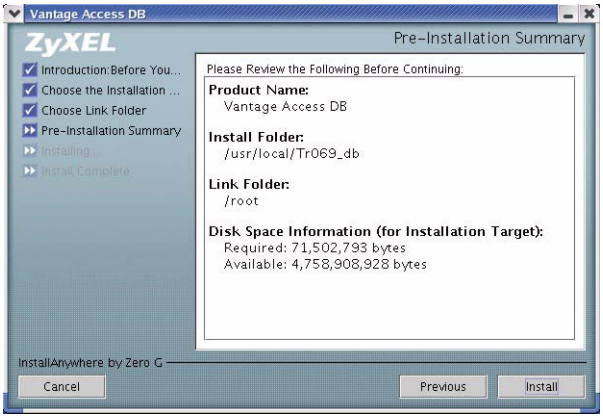
4 Specify the location for the database. Accept the default location (`/usr/local`) or enter the file path in the field provided.



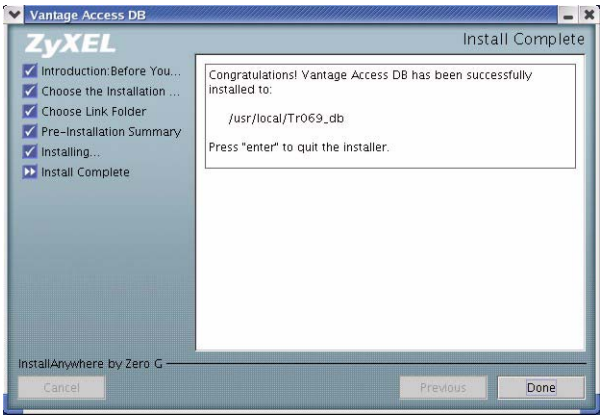
5 Select the location for the shortcut or select **Don't create links** if you don't want to create shortcuts.



6 Verify your installation options in this screen and click **Next** to start the installation process.

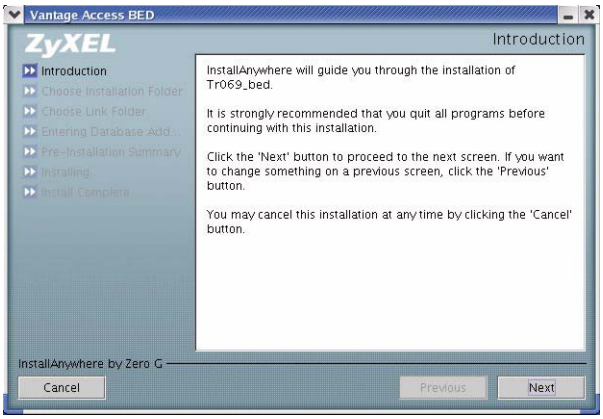


7 After the software component is installed successfully, the screen displays. Click **Done**.

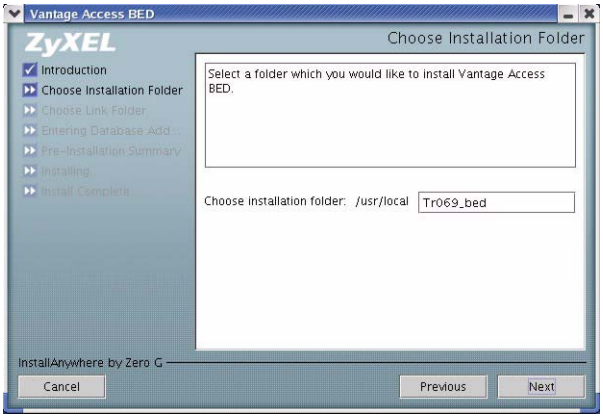


2.3.2 Installing Vantage Access BED

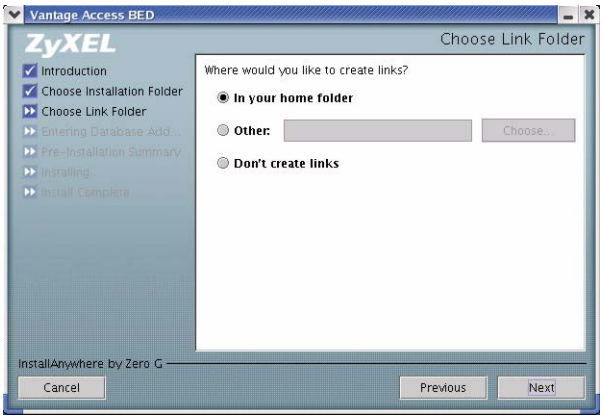
1. In the folder where you stored the installation file, enter `chmod +x Vantage_Access_BED.bin` to set it to be executable.
2. Enter `./Vantage_Access_BED.bin` to start the installation process.
3. The wizard screen displays. Click **Next** in each screen to continue.


Vantage Access BED
ZyXEL
Introduction
Introduction
Choose Installation Folder
Choose Link Folder
Entering Database Add...
Pre-Installation Summary
Installing...
Install Complete
InstallAnywhere will guide you through the installation of Tr069_bed.
It is strongly recommended that you quit all programs before continuing with this installation.
Click the 'Next' button to proceed to the next screen. If you want to change something on a previous screen, click the 'Previous' button.
You may cancel this installation at any time by clicking the 'Cancel' button.
InstallAnywhere by Zero G
Cancel
Previous
Next

4. Specify the file location. Accept the default location or enter the file path in the field provided.

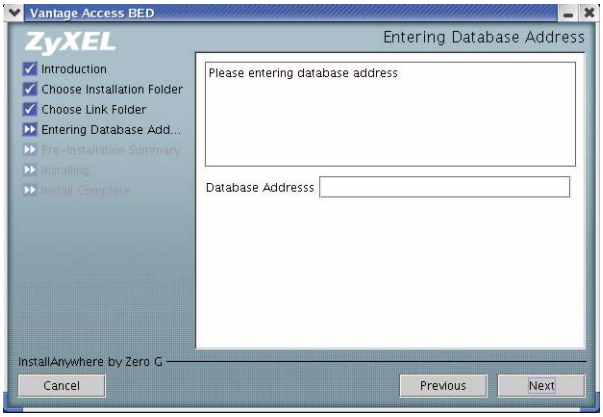


5. Select the location for the shortcut or select **Don't create links** if you don't want to create shortcuts.

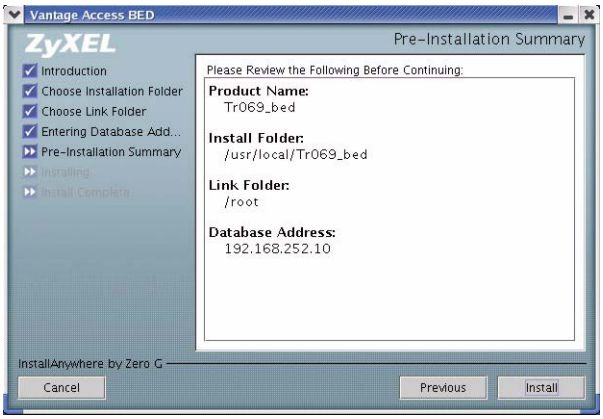


6 Enter the IP address of the computer on which you installed Vantage Access DB.

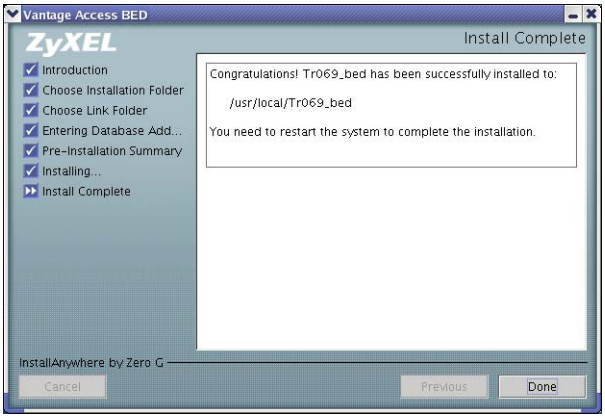
If you install both Vantage Access DB and Vantage Access BED on the same computer, enter the computer IP address or 127.0.0.1.



7 Verify your installation options in this screen and click **Next** to start the installation process.



8 After the software component is installed successfully, the screen displays. Click **Done**.

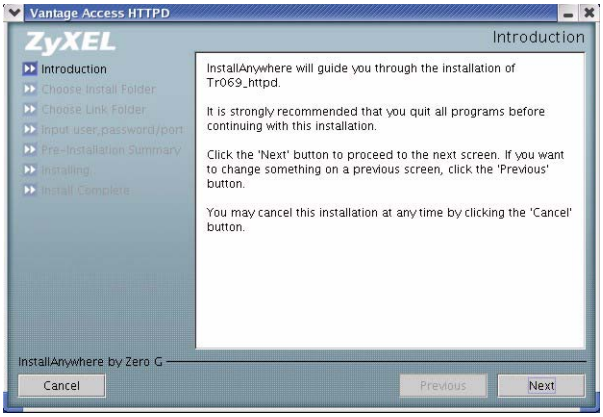


2.3.3 Installing Vantage Access HTTPD

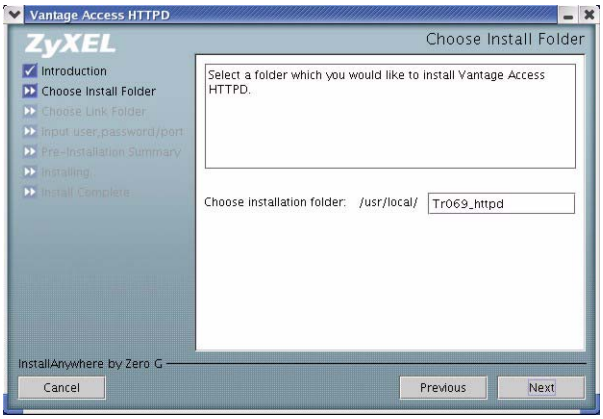
1 In the folder where you stored the installation file, enter `chmod +x Vantage_Access_HTTPD.bin` to set it to be executable.

2 Enter `./Vantage_Access_HTTPD.bin` to start the installation process.

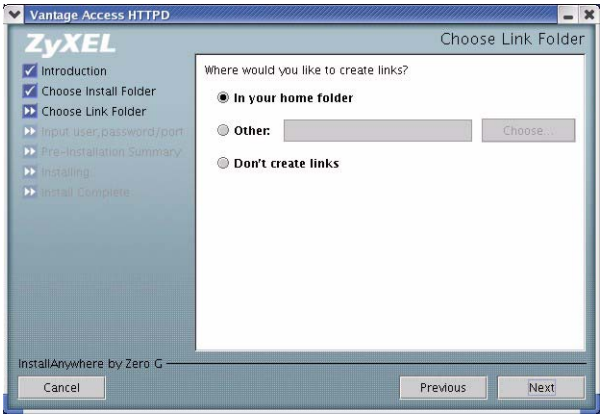
3 The wizard screen displays. Click **Next** in each screen to continue.


Vantage Access HTTPD
ZyXEL
Introduction
Introduction
Choose Install Folder
Choose Link Folder
Input user,password/port
Pre-Installation Summary
Installing...
Install Complete
InstallAnywhere will guide you through the installation of Tr069_httpd.
It is strongly recommended that you quit all programs before continuing with this installation.
Click the 'Next' button to proceed to the next screen. If you want to change something on a previous screen, click the 'Previous' button.
You may cancel this installation at any time by clicking the 'Cancel' button.
InstallAnywhere by Zero G
Cancel
Previous
Next

4 Specify the file location. Accept the default location or click **Choose** to specify one.

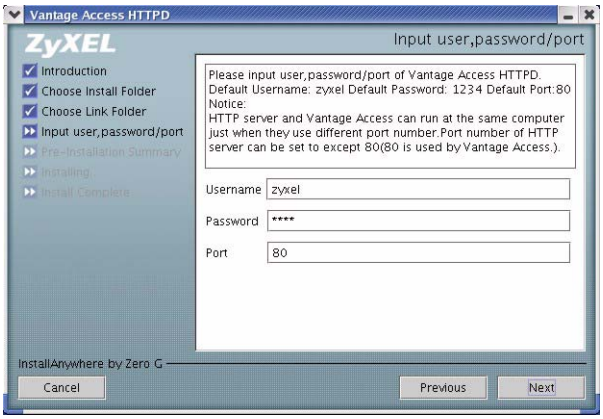


5 Select the location for the shortcut or select **Don't create links** if you don't want to create shortcuts.



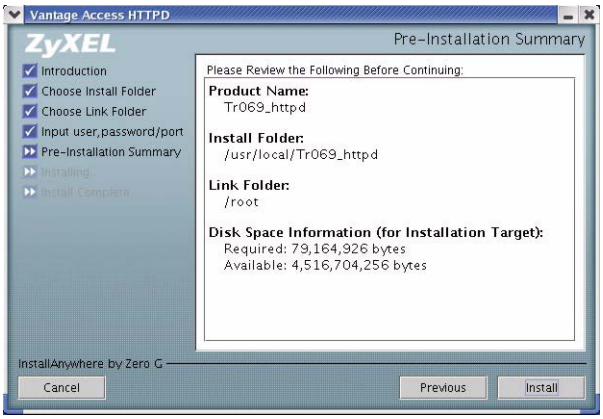
6 Specify the user name and password to log into the Vantage Access HTTPD server. You can use the default settings ("zyxel", "1234", and port "80") or enter the information in the fields provided.

Remember this user name and password as you will need this information later.

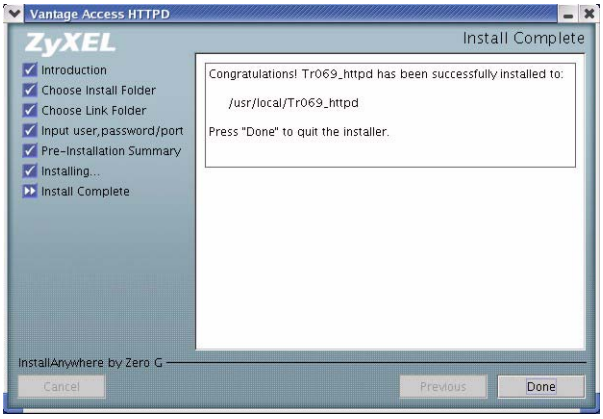


If you install Vantage Access BED and Vantage Access HTTPD on the same computer, enter a different port number other than 80 in this screen. For example, enter 8080.

7 Verify your installation options in this screen and click **Next** to start the installation process.



8 After the software component is installed successfully, the screen displays. Click **Done**.



2.4 Installation Using Text-based Line Commands

This section shows you how to install Vantage Access using text-based commands.

2.4.1 Installing Vantage Access DB

1 In the folder where you stored the installation file, enter `chmod +x Vantage_Access_DB.bin` to set it to be executable.

2 Enter `./Vantage_Access_DB.bin -i console` to start the installation process.

3 Press [ENTER] at the prompt to continue.

```
Script started on Wed 30 Aug 2006 10:59:09 AM HKT
[root@localhost root]# cd /usr/local/vantage
[root@localhost vantage]# ./Vantage_Access_DB.bin -i console
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...

Preparing CONSOLE Mode Installation...

===============================================================================
                                        (created with InstallAnywhere by Zero G)
-------------------------------------------------------------------------------



===============================================================================
Introduction:Before You Begin
-----------------------------

InstallAnywhere will guide you through the installation of Vantage Access DB.

It is strongly recommended that you quit all programs before continuing with
this installation.

You should uninstall any existing MySQL servers on the computer that you will
install tr069 DataBase,Click the 'Next' button to proceed to the next screen.
If you want to change something on a previous screen, click the 'Previous'
button.

You may cancel this installation at any time by typing 'quit'.

PRESS <ENTER> TO CONTINUE:
```

4 Specify the location for the database or press [ENTER] to accept the default location and continue.

```
===============================================================================
Choose the Installation Folder
------------------------------

Select a folder in which you would like to install tr069 DataBase. Spaces in the folder
name or path are not allowed.

Choose installation folder:  /usr/local/ (DEFAULT: Tr069_db)
   :
```

5 Enter a number to specify the location for the shortcut or press [ENTER] to create the shortcut in the default location and continue.

```
================================================================================
Choose Link Location
--------------------

Where would you like to create tr069 DataBase shortcut?

  ->1- Default: /root
    2- In your home folder
    3- Choose another location...

    4- Don't create links

ENTER THE NUMBER OF AN OPTION ABOVE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT
      :
```

6 Verify your installation options in this screen and press [ENTER] to start the installation process.

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    Vantage Access DB

Install Folder:
    /usr/local/Tr069_db

Link Folder:
    /root

Disk Space Information (for Installation Target):
    Required:  71,502,793 bytes
    Available: 4,754,452,480 bytes

PRESS <ENTER> TO CONTINUE:
```

7 After the software component is installed successfully, press [ENTER] to exit.

```
================================================================================
Installing...
-------------

 [==================|==================|==================|==================]
 [------------------|------------------|------------------|------------------]



================================================================================
Installation Complete
---------------------

Congratulations. Vantage Access DB has been successfully installed to:

/usr/local/Tr069_db
Press "enter" to quit the installer.

PRESS <ENTER> TO EXIT THE INSTALLER:
[root@localhost vantage]#
```

2.4.2 Installing Vantage Access BED

1 In the folder where you stored the installation file, enter `chmod +x Vantage_Access_BED.bin` to set it to be executable.

2 Enter `./Vantage_Access_BED.bin -i console` to start the installation process.

3 Press [ENTER] at the prompt to continue.

```
[root@localhost vantage]# ./Vantage_Access_BED.bin -i console
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...

Preparing CONSOLE Mode Installation...

===============================================================================
                                     (created with InstallAnywhere by Zero G)
-------------------------------------------------------------------------------




===============================================================================
Introduction
------------

InstallAnywhere will guide you through the installation of Tr069_bed.

It is strongly recommended that you quit all programs before continuing with
this installation.

Respond to each prompt to proceed to the next step in the installation.  If you
want to change something on a previous step, type 'back'.

You may cancel this installation at any time by typing 'quit'.

PRESS <ENTER> TO CONTINUE:
```

4 Specify the file location or press [ENTER] to accept the default location and continue.

```
===============================================================================
Get User Input
--------------

Enter requested information

Choose installation folder:  /usr/local (DEFAULT: Tr069_bed)
   :
```

5 Enter a number to specify the location for the shortcut or press [ENTER] to create the shortcut in the default location and continue.

```
================================================================================
Choose Link Location
--------------------

Where would you like to create links?

  ->1- Default: /root
    2- In your home folder
    3- Choose another location...

    4- Don't create links

ENTER THE NUMBER OF AN OPTION ABOVE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT
      :
```

6 Enter the IP address of the computer on which you installed Vantage Access DB.
If you install both Vantage Access DB and Vantage Access BED on the same computer, enter the computer IP address or 127.0.0.1.

```
================================================================================
Entering Database Address
-------------------------

Please entering database address

Database Address (DEFAULT: ):
```

7 Verify your installation options in this screen and press [ENTER] to start the installation process.

```
================================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    Tr069_bed

Install Folder:
    /usr/local/Tr069_bed

Link Folder:
    /root

Database Address:
    192.168.252.10

Disk Space Information (for Installation Target):
    Required:  83,932,756 bytes
    Available: 4,629,377,024 bytes

PRESS <ENTER> TO CONTINUE:
```

8 After the software component is installed successfully, press [ENTER] to exit.

```
================================================================================
Installing...
-------------

 [==================|==================|==================|==================]
 [------------------|------------------|------------------|------------------]



================================================================================
Installation Complete
---------------------

Congratulations. Tr069_bed has been successfully installed to:

   /usr/local/Tr069_bed

PRESS <ENTER> TO EXIT THE INSTALLER:
[root@localhost vantage]#
```

2.4.3 Installing Vantage Access HTTPD

1 In the folder where you stored the installation file, enter `chmod +x Vantage_Access_HTTPD.bin` to set it to be executable.

2. Enter `./Vantage_Access_HTTPD.bin -i console` to start the installation process.
3. Press [ENTER] at the prompt to continue.

```
[root@localhost vantage]# ./Vantage_Access_HTTPD.bin -i console
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...

Preparing CONSOLE Mode Installation...

===============================================================================
                                        (created with InstallAnywhere by Zero G)
-------------------------------------------------------------------------------




===============================================================================
Introduction
------------

InstallAnywhere will guide you through the installation of Tr069_httpd.

It is strongly recommended that you quit all programs before continuing with
this installation.

Click the 'Next' button to proceed to the next screen. If you want to change
something on a previous screen, click the 'Previous' button.

You may cancel this installation at any time by clicking the 'Cancel' button.

PRESS <ENTER> TO CONTINUE:
```

4. Specify the file location or press [ENTER] to accept the default location and continue.

```
===============================================================================
Choose Install Folder
---------------------

Select a folder which you would like to install Vantage Access HTTPD.
Where Would You Like to Install?

Choose installation folder:  /usr/local/ (DEFAULT: Tr069_httpd)
   :
```

5 Enter a number to specify the location for the shortcut or press [ENTER] to create the shortcut in the default location and continue.

```
================================================================================
Choose Link Location
--------------------

Where would you like to create links for Vantage FW Server?

  ->1- Default: /root
    2- In your home folder
    3- Choose another location...

    4- Don't create links

ENTER THE NUMBER OF AN OPTION ABOVE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT
      :
```

6 Specify the user name and password to log into the Vantage Access HTTPD server. You can use the default settings or enter the information in the fields provided.

Remember this user name and password as you will need this information later. Press [ENTER] to continue.

```
================================================================================
Entering username
-----------------

Please entering username for Vantage Access HTTPD. Valid characters include a-z, A-Z
0-9. Default value is "zyxel".

Username (DEFAULT: zyxel):




================================================================================
Enter password
--------------

Please entering password for Vantage Access HTTPD, Valid characters include a-z, A-Z
0-9. Default value is "1234".

Password (DEFAULT: 1234):
```

7 Specify a port number for the download server and press [ENTER].

If you install Vantage Access BED and Vantage Access HTTPD on the same computer, enter a different port number other than 80 in this screen. For example, enter 8080.

```
===============================================================================
Enter port
----------

Please entering port for Vantage Access HTTPD, Valid port number between 1 to 65535.
Default value is 80.
Notice:
HTTP server and Vantage Access can run at the same computer just when they use
different port number.Port number of HTTP server can be set to except 80(80 is used by
Vantage Access.).

Port (DEFAULT: 80): 8080
```

8 Verify your installation options in this screen and press [ENTER] to start the installation process.

```
===============================================================================
Pre-Installation Summary
------------------------

Please Review the Following Before Continuing:

Product Name:
    Tr069_httpd

Install Folder:
    /usr/local/Tr069_httpd

Link Folder:
    /root

Disk Space Information (for Installation Target):
    Required:  79,164,926 bytes
    Available: 4,512,309,248

PRESS <ENTER> TO CONTINUE:
```

9 After the software component is installed successfully, press [ENTER] to exit. It is recommended that you reboot your computer.

```
================================================================================
Installing...
-------------

 [==================|==================|==================|==================]
 [------------------|------------------|------------------|------------------]



================================================================================
Installation Complete
---------------------

Congratulations. Tr069_httpd has been successfully installed to:

/usr/local/Tr069_httpd

Recommand, reboot your computer!

PRESS <ENTER> TO EXIT THE INSTALLER:
[root@localhost vantage]#
```

10 Restart your computer.

2.5 Starting Vantage Access

After the installation, you need to start the Vantage Access DB, BED and HTTPD services. You can do this in one of two ways,

- Enter `./start.sh` in the directories (`Tr069_db`, `Tr069_bed` and `Tr069_httpd`).
- If you choose to create shortcuts during the installation process, you can also use the shortcuts in your home directory (`/root`) or specific location(s) to start Vantage Access.

The following figure shows how to start Vantage Access using the `./start.sh` command for each software component.

```
[root@localhost local]# cd /usr/local/Tr069_db
[root@localhost Tr069_db]# ./start.sh
Starting mysqld daemon with databases from /usr/local/Tr069_db/mysql/data

################################################################################
###                   Vantage_Access_DB started successfully!              ###
################################################################################

[root@localhost Tr069_db]# cd /usr/local/Tr069_bed
[root@localhost Tr069_bed]# ./start.sh

Starting tr069...success
Starting httpd...success
Starting watchdog...success
#########################################################################
Vantage Access started (tr069 pid 2364; httpd pid 2377)
Version: 2.0.47.83.00b31
Date: 2007-06-15
#########################################################################

[root@localhost Tr069_bed]# cd /usr/local/Tr069_httpd
[root@localhost Tr069_httpd]# ./start.sh

################################################################################
Vantage Access HTTPD started successfully from /usr/local/Tr069_httpd
Version: 2.0.47.83.00b3
Date: 2007-06-15
################################################################################
[root@localhost Tr069_httpd]#
```

2.6 Stopping Vantage Access

You can stop Vantage Access DB, BED and HTTPD services in one of two ways,

- use the `./stop.sh` command in the folders (`Tr069_db`, `Tr069_bed` and `Tr069_httpd`).
- If you choose to create shortcuts during the installation process, you can also use the shortcuts in your home directory (`/root`) or specific location(s) to stop Vantage Access services.

The following figure shows how to stop Vantage Access services using shortcuts in the home directory.

```
[root@localhost root]# ls
manaconda-ks.cfg       LaunchVantageAccess_DB    Vantage_Access_BED.bin
install.log            Vantage_Access_DB.bin     install.log.syslog
StopVantageAccess_BED  Vantage_Access_HTTPD.bin  LaunchVantageAccess_HTTPD
StopVantageAccess_DB   LaunchVantageAccess_BED   StopVantageAccess_HTTPD
[root@localhost root]#
[root@localhost root]# ./StopVantageAccess_DB
################################################################################
###                 Vantage_Access_DB shutdown successfully!             ###
################################################################################
[root@localhost root]#
[root@localhost root]# ./StopVantageAccess_BED
Stopping httpd....success
Stopping tr069 server....success

################################################################################
Vantage Access BED stopped successfully
################################################################################

No watchdog is running.
[root@localhost root]# ./StopVantageAccess_HTTPD
################################################################################
Vantage Access HTTPD shutdown successfully
################################################################################
[root@localhost root]#
```

2.7 Uninstalling Vantage Access

You can uninstall Vantage Access using either text-based commands or the wizard screens. To remove Vantage Access from your computer, you must run the uninstall script for each component.

2.7.1 Using Commands

Follow the steps below to uninstall Vantage Access using commands.

1. Open a terminal window and go to the directory where Vantage Access is installed.
2. In the "`Uninstall_Vantage Access DB`" folder, enter `./Uninstall_Vantage_Access_DB -i console` to uninstall Vantage Access DB. Press [ENTER] when the uninstall process is complete.
3. In the "`Uninstall_Tr069_bed`" folder, enter `./Uninstall_Tr069_bed -i console` to uninstall Vantage Access BED. Press [ENTER] when the uninstall process is complete.
4. In the "`Uninstall_Tr069_httpd`" folder, enter `./Uninstall_Tr069_httpd -i console` to uninstall Vantage Access HTTPD. Press [ENTER] when the uninstall process is complete.

2.7.2 Using the Wizard Screens

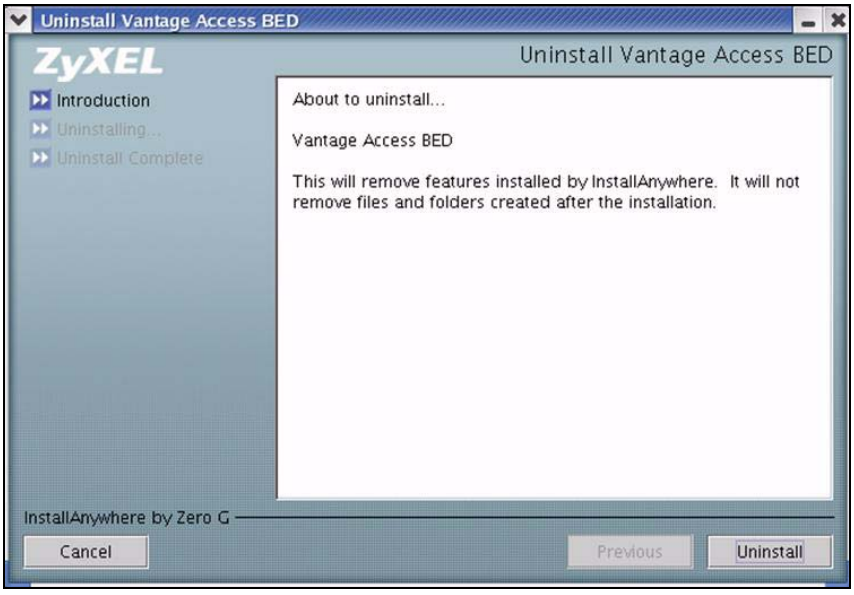
Follow the steps below to uninstall Vantage Access using the wizard screens.

1. Open a terminal window and go to the directory where Vantage Access is installed.
2. In the "`Uninstall_Vantage Access DB`" folder, enter `./Uninstall_Vantage_Access_DB` to uninstall Vantage Access DB. A screen displays as shown. Click **Uninstall** to remove this component. Then click **Done** when the uninstall process is complete.

Figure 2 Uninstall: Vantage Access DB

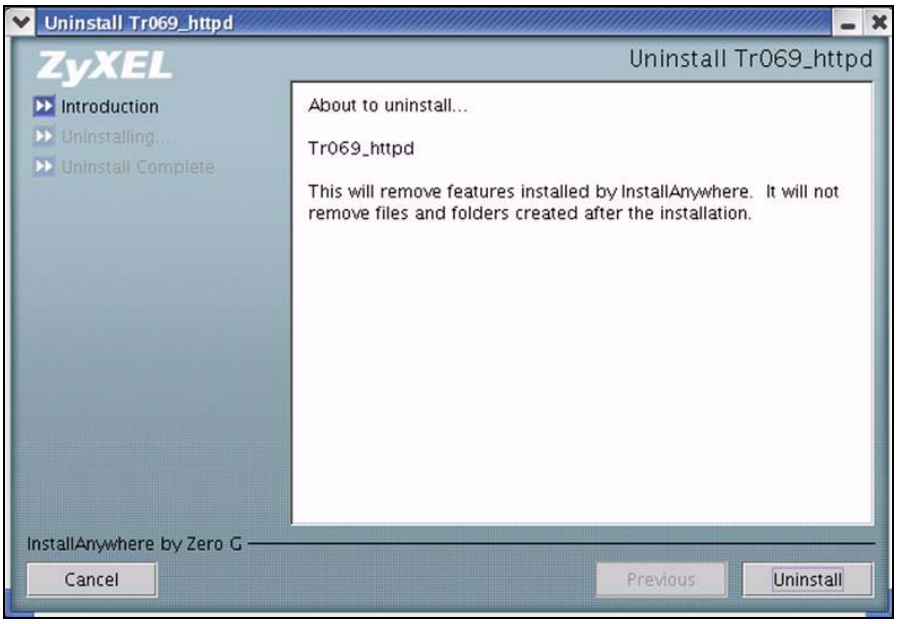
3. In the "`Uninstall_Tr069_bed`" folder, enter `./Uninstall_Tr069_bed` to uninstall Vantage Access BED. A screen displays as shown. Click **Uninstall** to remove this component. Then click **Done** when the uninstall process is complete.

Figure 3 Uninstall: Vantage Access BED



4 In the "`Uninstall_Tr069_httpd`" folder, enter `./Uninstall_Tr069_httpd` to uninstall Vantage Access HTTPD. A screen displays as shown. Click **Uninstall** to remove this component. Then click **Done** when the uninstall process is complete.

Figure 4 Uninstall: Vantage Access HTTPD



3

The Web Configurator

This chapter provides the minimum requirements to use the web configurator, describes how to access the web configurator, and explains each part of the main screen in the web configurator.

3.1 Web Browser Requirements

The web configurator is a browser-based interface that you can use to set up, manage, and use Vantage Access. You can access it on the Vantage Access server or on a different computer. Your web browser should meet the following requirements:

- Internet Explorer 6.0
- JavaScript enabled
- Macromedia Flash Player 9.0 or later
- Recommended screen resolution: 1024 x 768 pixels

3.2 Login Accounts

Vantage Access provides three login account types with different privilege levels. The web configurator screens and privileges vary depending on which account you use to log in. The following table shows the default user name and password for the different login accounts.

Table 1 Default Login Accounts

TYPE	DEFAULT SETTINGS
Root	User name: root Password: root
Manager	No default account.
Call Center	No default account.

Refer to Table 307 on page 525 for more information on the login accounts.

3.3 Accessing the Web Configurator

To access the web configurator, follow these steps:

1 Start Vantage Access (refer to the Quick Start Guide).

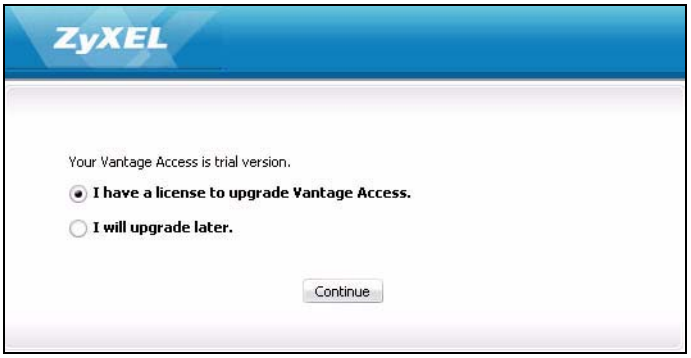
2 Open a web browser, and enter “http://a.b.c.d”, where “a.b.c.d” is the IP address of the Vantage Access server (for example, http://10.10.10.1).

If you open the web configurator on the same computer Vantage Access is installed, you can also enter “http://localhost”.

3 Select **I have a license to activate Vantage Access** to start the product registration. Then click **Continue**.

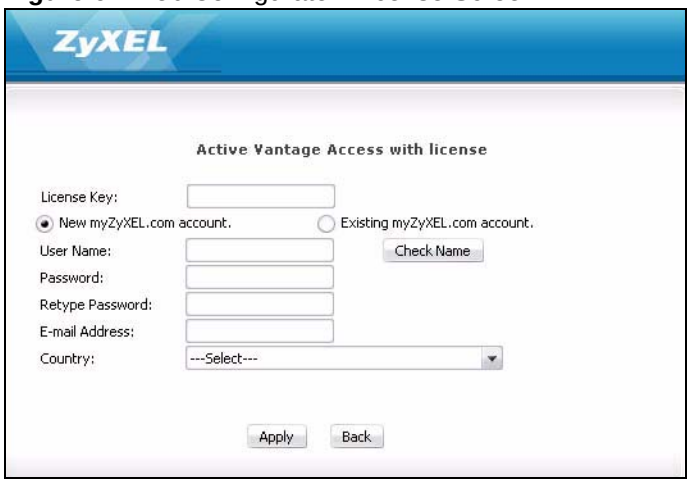
Select **I will upgrade later** to skip the product registration. Click **Continue** and a login screen displays. See step 5.

Figure 5 Web Configurator: License Setup Screen



4 A License screen displays. Enter the license key and the MyZyXEL.com account information in the fields provided. Click **Apply** to activate the product.

Figure 6 Web Configurator: License Screen



5 A **Login** screen displays as shown. Specify the **User Name** and **Password** fields.

Figure 7 Web Configurator: Login Screen

6 Click **Login**.

By default, if you enter the wrong password three times for a user name, you have to wait for 10 minutes before Vantage Access allows you to log in again with the same user name. You can change this in the System Manager > User Management > Common Setting screen. It is recommended that you change the default manager login password after the first login.

7 For root or manager login, the Vantage Access dashboard screen displays. If you log in as a user, the **About** screen displays.

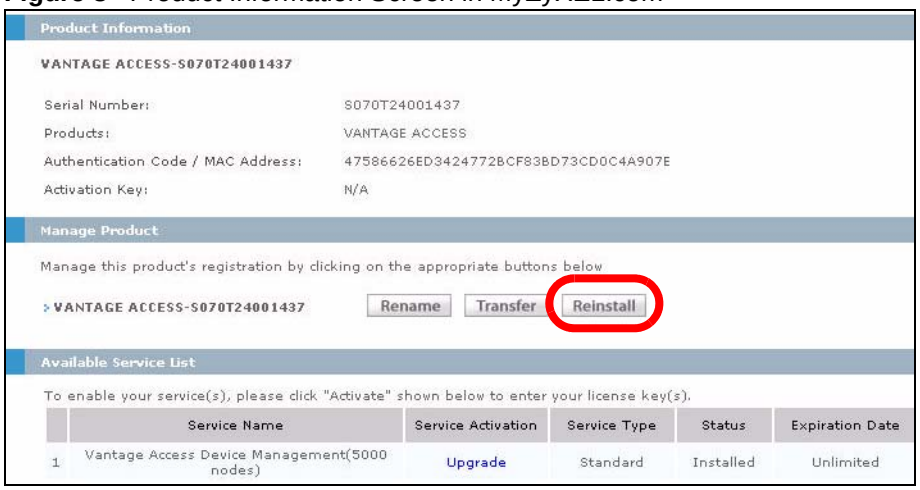
If there is no activity for more than 15 minutes, the web configurator automatically logs you out. If this happens to you, simply log back into the web configurator again.

3.4 Reinstall Existing License on Vantage Access

If you perform a new installation of Vantage Access, but want to use a license key from a previously purchased and registered instance of Vantage Access. Do the following:

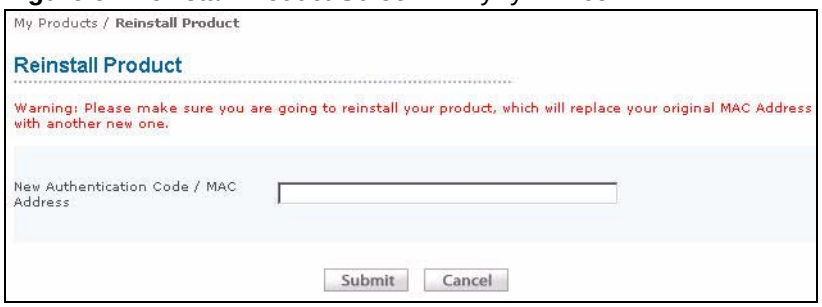
1 Log into http://www.myzyxel.com.
2 Browse to Vantage Access product detail screen of your already registered Vantage Access.
3 Click **Reinstall** to use your existing license key for the new installation of Vantage Access.

Figure 8 Product Information Screen in MyZyXEL.com



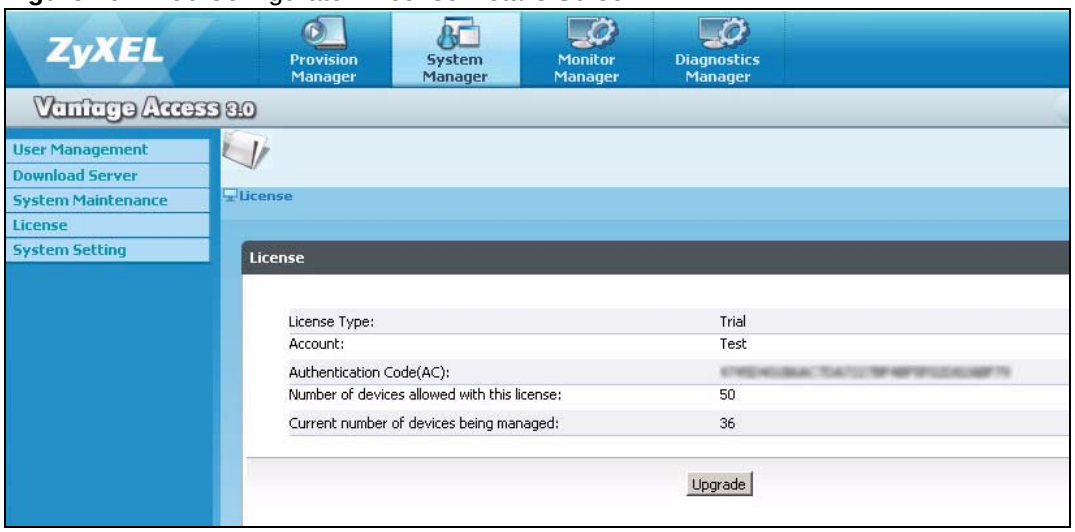
4 You are prompted to enter the New Authentication Code which can be copied from **System Manager** > **License** > **Authentication Code** (AC) on your new install Vantage Access server. Click **Submit** then.

Figure 9 Reinstall Product Screen in MyZyXEL.com


My Products / Reinstall Product
Reinstall Product
Warning: Please make sure you are going to reinstall your product, which will replace your original MAC Address with another new one.
New Authentication Code / MAC Address
Submit
Cancel

5 Connect your Vantage Access to Internet, click **Refresh** in **System Manager** > **License** to get the latest status update from MyZyXEL.com database.

Figure 10 Web Configurator: License Details Screen

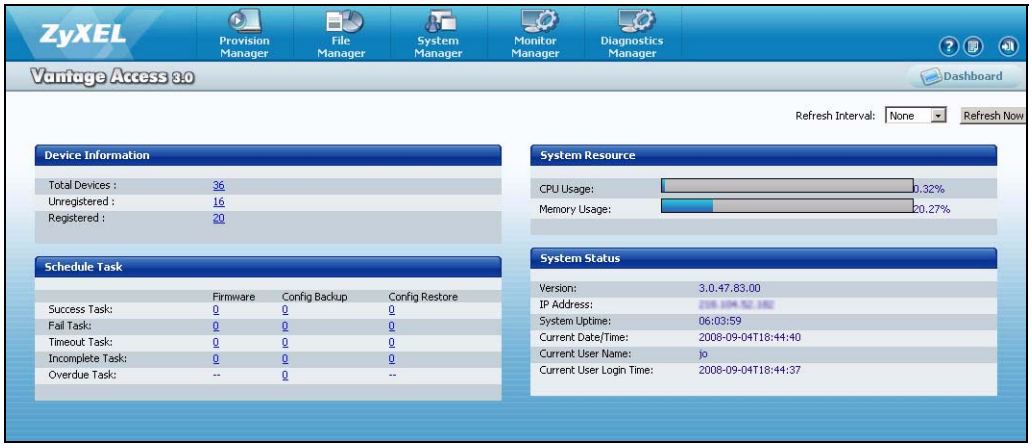


3.5 The Dashboard Screen

The **Dashboard** screen is the first screen that you see when you first log into the web configurator as root or manager. You can also display this screen by clicking **Dashboard** in the control panel. Field labels vary depending on your login account type.

This screen shows a summary of the system and managed device information.

Figure 11 Web Configurator: Dashboard



The following table describes the labels in this screen.

Table 2 Dashboard

LABEL	DESCRIPTION
Device Information	
Total Devices	This field displays the total number of devices in the Vantage Access database.
Unregistered	This field displays the number of unregistered devices in the Vantage Access database. If a device is unregistered, Vantage Access is unable to connect to and update configuration settings to or obtain information from the device.
Registered	This field displays the number of registered devices in the Vantage Access database. If a device is registered Vantage Access is able to connect to the device, update configuration settings or obtain information from the device.
Schedule Task	
Firmware	This column displays information on tasks related to device firmware upgrades.
Config Backup	This column displays information on tasks related to backing up devices' configuration.
Config Restore	This column displays information on tasks related to restoring devices' configuration.
Success Task	This field displays the number of scheduled tasks that Vantage Access has performed successfully. Click a number to see a list of tasks.
Fail Task	This field displays the number of scheduled tasks that Vantage Access was unable to perform successfully. Click a number to see a list of tasks.
Timeout Task	This field displays the number of scheduled tasks that timed out and Vantage Access was unable to perform successfully. Click a number to see a list of tasks.
Incomplete Task	This field displays the number of scheduled tasks that were not finished. Click a number to see a list of tasks.

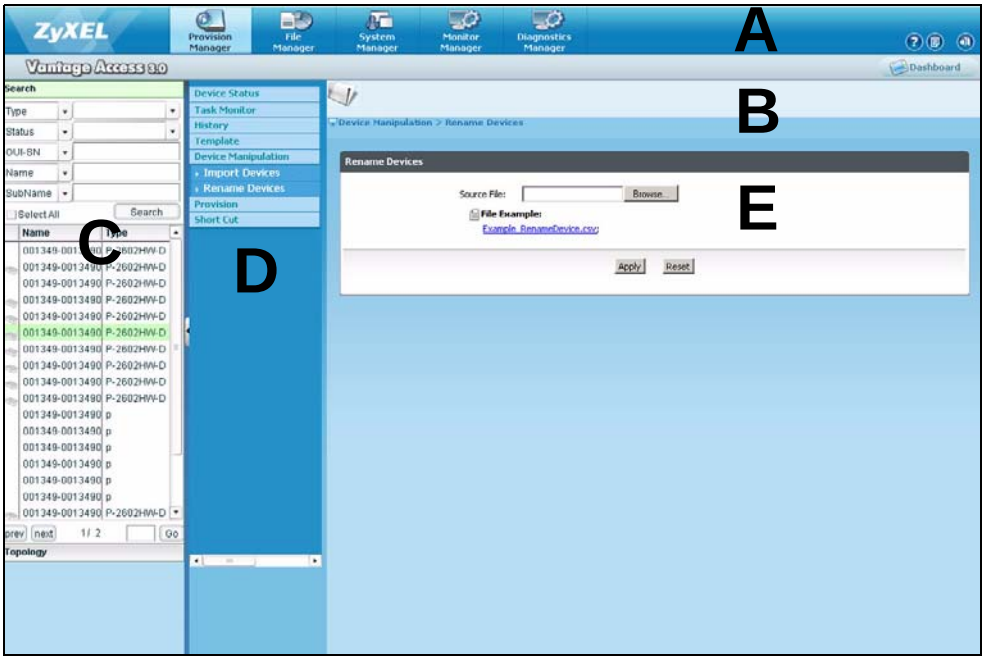
Table 2 Dashboard (continued)

LABEL	DESCRIPTION
System Resource	
CPU Usage	This bar displays the percentage of the CPU's processing resources the Vantage Access is using.
Memory Usage	This bar displays the percentage of the memory resources the Vantage Access is using.
System Status	
Version	This field displays the Vantage Access version running on the computer.
IP Address	This field displays the IP address of the Vantage Access computer.
System Uptime	This field displays the time since the Vantage Access service was last restarted on the computer.
Current Date/ Time	This field displays the current system time and date in the format yyyy-mm-ddThh-mm-ss. The character "T" separates the date (yyyy-mm-dd) and time (hh-mm-ss).
Current User Name	This field displays the user name and the time of login for the current web configurator session.
Current User Login Time	This field displays the elapsed time since the user logged in.
Number of Login Users	This field displays the total number of users logged into Vantage Access.

3.6 Vantage Access Web Configurator Overview

This section describes the parts of a Vantage Access screen.

Figure 12 Web Configurator Screen Overview



The web configuration screen is divided into the following parts:

- The control panel (**A**)
  The control panel displays in every web configurator screen. All the common web configurator buttons are in the control panel.
- The title bar (**B**)
  The title bar displays the login name or device information, and link path.
- The device window (**C**)
  The device window displays the devices that are managed by the Vantage Access. You can also configure and view the logical groupings of the managed devices.
- The navigation panel (**D**)
  The navigation panel displays a list of links that you click to access configuration or log screens.
- The configuration window (**E**)
  The configuration window displays the configuration screens that you set for Vantage Access or a selected device.

For security reasons, Vantage Access automatically times out after fifteen minutes of inactivity. Log in again if this happens.

3.7 Control Panel

The following table describes the icons in the control panel.

Table 3 Title Bar Icon Description

ICON	DESCRIPTION
	Click this icon to display the navigation links to screens that allow you to view, monitor or manage a selected device.
	Click this icon to display the navigation links to screens that allow you to manage device firmware and configuration files. **Note: This icon is available in the web configurator only when you log in using a manager user account.**
	Click this icon to display the navigation links to screens that allow you to manage login user accounts and system logs and, if you log in as root, file server, license and system settings.
	Click this icon to display the navigation links to screens that allow you to manage logs, email events, disk space and statistical reports.
	Click this icon to display the navigation links to screens that allow you to configure telnet and diagnostic settings.
	Click this icon to display the dashboard screen and view the current system information.

Table 3 Title Bar Icon Description (continued)

ICON	DESCRIPTION
	Click this icon to open a screen that displays the version of Vantage Access.
	Click this icon to open the help page for the current screen in Vantage Access.
	Click this icon to log out of Vantage Access.

3.8 Device Window

The device window displays when you click the **Provision Manager** or icon.

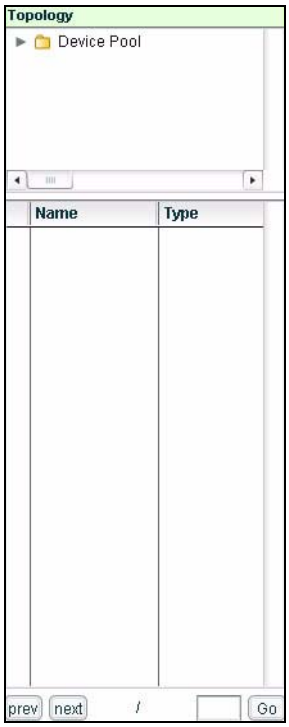
Use the device window to view the logical network topology, search for a device, view general device status or select which device(s) you want to edit configuration settings.

3.8.1 Topology

You can view the logical network topology in the **Topology** screen in the device window. You can also create, delete or rename a device group folder in the **Topology** screen.

In the **Topology** screen, you can only view the group folder(s) for your login account. You cannot view the group folders created by another user.

Figure 13 Device Window: Topology



The following table describes the labels in the Device window.

Table 4 Device Window: Topology

LABEL	DESCRIPTION
Topology	Click **Topology** to display device groups in a tree structure.
	This icon displays to the left of a device when the device is successfully registered. No icon displays if the device is not registered, registration is incomplete or has failed.
Name	This field displays the descriptive name of a managed device.
Type	This field displays the model number of a managed device. For example, P-2602R.
prev	Click **prev** to go to the previous screen in the device list.
next	Click **next** to go to the next screen in the device list.
Go	Enter a page number and click **Go** to display the entries in that screen.
Search	Click **Search** to look for a device.

3.8.1.1 Creating a Group Folder

Topology group folders allow you to group managed devices logically. You can add or delete device(s) in a group. The following steps show you how to create a device group folder in the **Topology** screen.

1. In the device window, click **Topology.**
2. Right-click on **Device Pool** and click **Add Group**.

Figure 14 Device Window: Topology: Add a Group

3. The screen displays as shown. Enter a descriptive name for the group and click **Save**.

Figure 15 Device Window: Topology: Add Group

4. A new folder icon displays.

3.8.1.2 Deleting a Group

Deleting a group removes the association between the device(s) and the group folder. It does not delete the devices.

Follow the steps below to delete a group.

1. In the device window, click **Topology**.
2. Right-click on a group folder and click **Delete Group**.

Figure 16 Device Window: Topology: Delete Group

3. A warning screen displays.
   Click **OK** to delete.
   Click **Cancel** to close this screen without deleting the selected group.

Figure 17 Device Window: Topology: Delete Group Prompt

3.8.1.3 Removing a Group

When you remove a group, you delete the group folder and all the associated device(s).

1. In the device window, click **Topology**.
2. Right-click on a folder and click **Remove Group**.

Figure 18 Device Window: Topology: Remove a Group

3. A warning screen displays.

Click **OK** to delete.

Click **Cancel** to close this screen without deleting the selected group.

Figure 19 Device Window: Topology: Remove Group

3.8.1.4 Renaming a Group Folder

1. In the device window, click **Topology.**
2. Right-click on a folder and click **Rename**.

Figure 20 Device Window: Topology: Rename

3. Specify a unique, descriptive name (up to 64 alphanumerical characters including 0-9, a-z, A-Z, _, -) in the **Group Name** field and click **Save**.

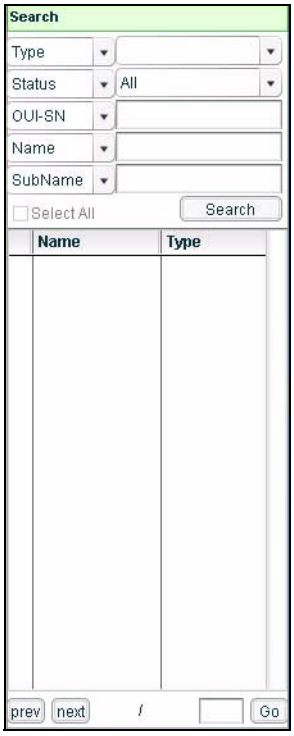
Figure 21 Device Window: Topology: Change Name

3.8.2 Device Search

Use the **Search** function in the device window to look for a device.

1. In the device window, click **Search**.

Figure 22 Device Window: Search



2 Specify the search criteria (such as the device type, device name, etc.) and click **Search**. If you want to see all devices in Vantage Access, leave all search criteria blank and click **Search**. The list of devices displayed varies depending on your login account; see Section 3.8.3.1 on page 87 for more information.

3 Vantage Access displays the device(s) that match any of the search criteria. Refer to Table 4 on page 83 for information on device information fields and navigation.

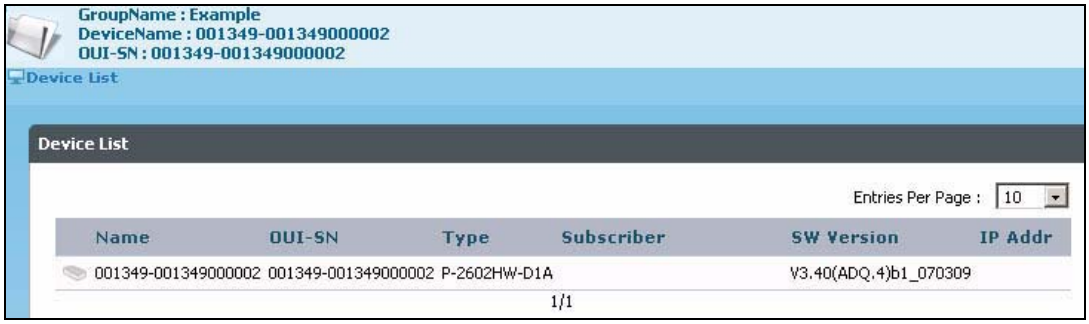
After the device(s) are found, you can add the selected device(s) to a group, associate or un-associate the device(s). See Section 3.8.3 on page 86 for more information.

3.8.3 Device List

The **Device List** screen displays when you preform a device search, or select a device or a device group in the device window. Use this screen to view detailed device information (such as the MAC address, firmware version and the registration status). To view detailed status, display the **Device Status** screen (see Chapter 5 on page 101).

The title bar displays the name of the device group to which the device belongs and the serial number. To sort the entries in the table, click on a heading in the table.

Figure 23 Configuration Window: Device List



The following table describes the labels in this screen.

Table 5 Configuration Screen: Device List

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
	This icon displays to the left of a device when the device is successfully registered. No icon displays if the device is not registered, registration is incomplete or has failed.
Name	This field displays the descriptive name of a device.
OUI-SN	This field displays the Organization Unique Identifier (OUI) and the serial number of a device.
Type	This field displays the model of a device. For example, P-2602R.
Subscriber	This field displays the **Subscriber Name** you configure in the **Device Status** screen.
Owner	This field displays the name of the manager who is responsible for this device.
SW Version	This field displays the firmware version the ZyXEL device is currently running.
IP Addr	This field displays the device's WAN IP address.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that page.

3.8.3.1 Displaying Devices

To view a list of devices in Vantage Access, click **Search** in the device window, leave all search criteria blank, and click **Search**. The list of devices displayed varies depending on your login account.

- For root login, this screen displays all devices in Vantage Access.
- For manager login, this screen displays the device(s) associated to a manager account.
- For guest login, this screen displays the device(s) associated with the manager that created the guest account.

3.8.3.2 Adding a Device to a Group

Follow the steps below to add a device to a group.

1. In the device window, click **Search**. Either enter the search criteria for the device and click **Search**, or leave the fields blank and click **Search** to display all devices.
2. Select the device(s) in the list. To select more than one device, hold down the [CTRL] key and click. To select a range of devices, hold down the [SHIFT] key and click at the same time. Then click **AddToGroup**.
3. In the **Group Name** field, enter or select the name of the group to which you want to associate the devices and click **Save**.

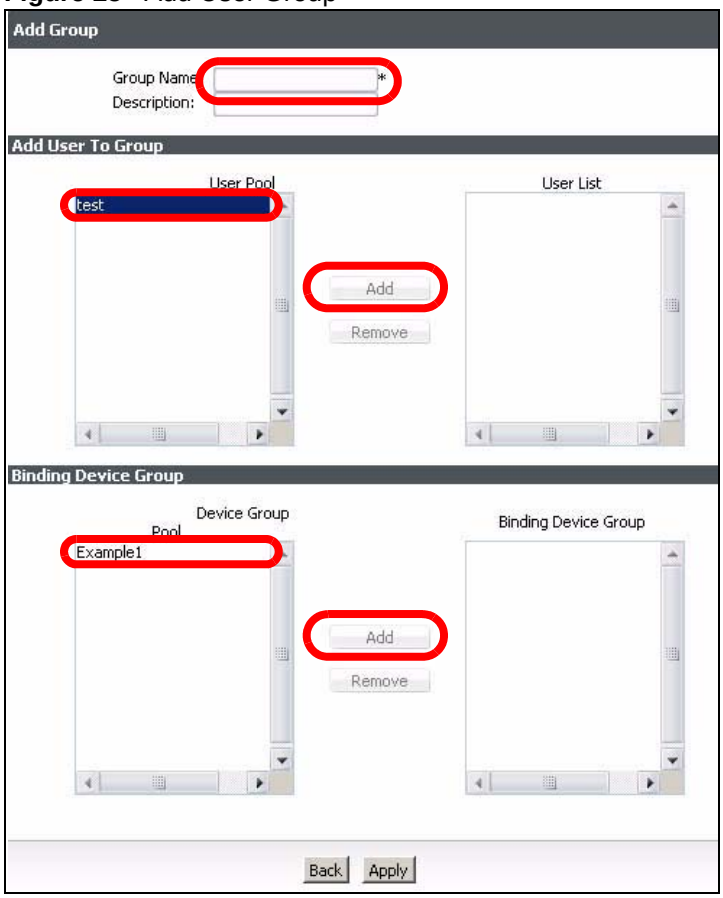
Figure 24 Device Window: Device List: Add Device to Group

3.8.3.3 Associating a Device with a User

Devices are members of device groups, and users are members of user groups. To associate a device with a user, you must assign the device to a device group, assign the user to a user group, then associate the device group with the user group. Take the following steps.

1. Log into Vantage Access as root.
2. Create a device group. See Section 3.8.1.1 on page 83.
3. Add the device to the device group. See Section 3.8.3.2 on page 87.
4. Create a user group that associates the device group with users. Click **System Manager** > **User Management** > **User Group** > **Add**. The following screen displays.

Figure 25 Add User Group



- Enter a **Group Name**.
- Select the required users from the **User Pool** and **Add** them to the **User List**.
- Select the required device group from the **Device Group Pool** and **Add** them to the **Binding Device Group**.
- Click **Apply**. Alternatively, click **Back** to return to the previous screen without saving your settings.

3.8.4 Right-click Menu

In the device window, if you right-click without selecting a device first, the following menu displays.

Figure 26 Device Window: Right-click Menu

Click **Settings...** to display the **Adobe Flash Player Settings** screen if you want to change the Flash privacy settings on Vantage Access. For more information, refer to the online help in the **Adobe Flash Player Settings** screen.

Click **About Adobe Flash Player 9...** to get information about the current version of Flash.

3.9 Navigation Panel

Use this panel to navigate to and display the screens. These screens are organized into different menus. Menus available in the navigation panel vary depending your login account type and whether you have selected a device or device group.

You can only expand the submenus from a menu at one time. If you expand another one, the previous one automatically contracts.

Not all options are available for all user privilege levels.
Grayed-out links indicate features not available for the current device or group selection.

The following table describes the menus.

Table 6 Navigation Panel: Menu Summary

MENU	DESCRIPTION
Provision Manager	
Device Status	This link takes you to a screen where you can view the current settings of the selected ZyXEL device.
Task Monitor	This link takes you to a screen where you can view information about pending device configuration changes.
History	This link takes you to a screen where you can view device history logs.
Template	This link takes you to screens where you can manage, save and load device configuration templates.
Device Manipulation	This link takes you to screens where you can import and rename devices.
Provision	This link takes you to screens where you can view and edit configuration settings on the selected device or device group.
Short Cut	This link takes you to screens where you can view, add and delete short cuts. Short cuts allow you to use short names to control complex device configuration procedures.
File Manager	
Device Firmware	This link takes you to screens where you can manage device firmware files on the download server and configure device firmware upgrades.
Vendor Config File	This link takes you to screens where you can manage, backup and restore vendor configuration files.
System Manager	
User Management	This link takes you to screens where you can create, delete and view login accounts.
Download Server	This link takes you to a screen where you can specify the download server for file transfer.
System Maintenance	This link takes you to a screen where you can view, manage, backup and restore the backup files on the download server.
License	This link takes you to a screen you use to register Vantage Access and view registration information.

Table 6 Navigation Panel: Menu Summary (continued)

MENU	DESCRIPTION
System Setting	This link takes you to a screen you use to configure mail, download server, myzyxel.com, firmware and configuration file timing settings.
Monitor Manager	
Log Management	This link takes you to screens where you can view log history, retrieve or delete archive logs, configure log retention settings, add devices to the debug list, and manage the TR-069 log.
Alert Setting	This link takes you to screens where you can configure the E-mail server settings for sending E-mails to users, and manage the log types that trigger E-mails to be sent.
Disk Space Monitor	This link takes you to screens where you can see the amount of disk space currently in use, and configure the maximum percentage of disk space that may be used.
Statistical Report	This link takes you to a screen where you can configure the frequency and destination e-mail address of statistical reports. These reports include information on the total number of devices, the number of registered devices, and the change in the total number of devices (and registered devices) in a given time period.
Diagnostics Manager	
Telnet	This link takes you to screens where you can configure Telnet tasks and task files.
Diagnostic Test	This link takes you to screens where you can configure IP Ping Diagnostics, WAN DSL Diagnostics, WAN ATM F5 Loop back Diagnostics. The diagnostics available depend on the device type.

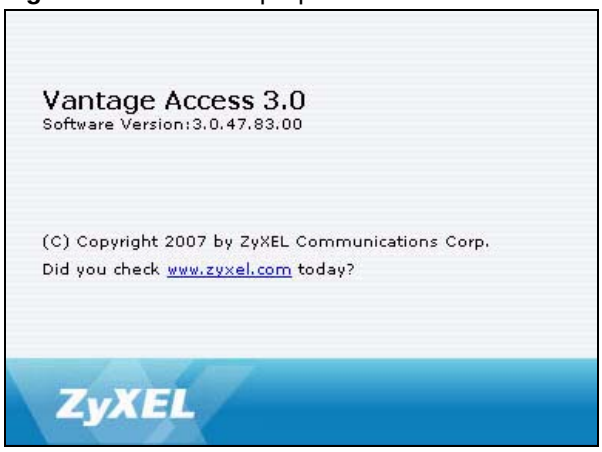
3.10 About Vantage Access

The **About** screen is the first screen that displays every time you click on an icon in the Control Panel. Use this screen to check the version of your Vantage Access.

Figure 27 About

To display the software version information in a pop-up screen, click the About icon.

Figure 28 About: Pop-up



4

Initial Setup

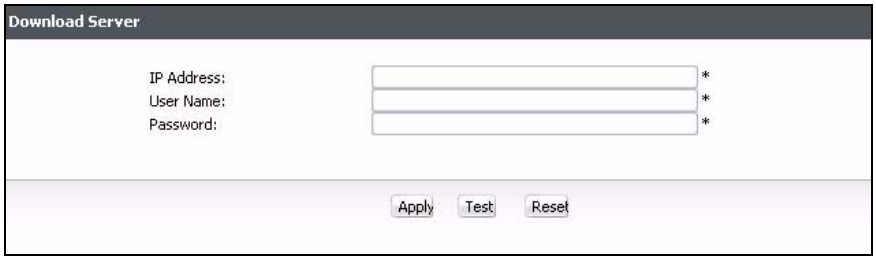
This chapter shows you how to configure the download server and register a ZyXEL device in Vantage Access.

4.1 Specifying a Download Server

You must specify a server to store device firmware and configuration files and perform automatic remote firmware upgrades or configuration restores on the devices.

1. Log into the web configurator as root (the default user name is “root” and the default password is “root”) and click the **System Manager** icon in the Control Panel.
2. Click **Download Server** in the navigation panel to display the configuration screen.

Figure 29 System Manager: Download Server



3. In the **IP Address** field, enter the IP address of the download server in dotted decimal notation.

If the download server and Vantage Access are installed on the same computer, you must use a different port number for the download server and specify the port number. For example, if the download server (192.168.100.1) is using port 8080, then enter “192.168.100.1:8080” in the IP Address field.

4. Set the **User Name** and **Password** fields to access the download server. If you have changed the default settings (“zyxel” and “1234”) during the installation process, enter the new account information. The account user name and password are case sensitive.
5. Click **Apply** to save the settings.

4.2 Registering a Device

You must register one or more compatible devices to Vantage Access to allow remote management.

- To register a single device, enter its information in the **Provision Manager** > **Device Manipulation** screen (see Section 8.1.2 on page 113).
- To register single or multiple devices, configure the devices' information in an XML or CSV file and upload the file to Vantage Access.

  See Section 4.2.1 on page 94 for information on using an XML file, and see Section 4.2.2 on page 95 for information on using a CSV file.
- Configure the device to allow remote management from Vantage Access. See Section 4.2.4 on page 96

You can import and register any compliant devices to Vantage Access.

4.2.1 Editing an XML File

You can import multiple devices to Vantage Access at one time using an XML file.

To import multiple devices at one time, you need to create an XML file that contains the information (such as the device name, OUI, serial number and device type) for each compatible device. To download an example file, click **Provision Manager** > **Device Manipulation** > **Import Devices** > **Example.xml**. You can modify the example file with your devices' information. The following shows an example for two ZyXEL compatible devices.

Figure 30 Sample Device XML File

```
<?xml version="1.0" encoding="UTF-8"?>
<Template xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Device>
    <deviceName>a</deviceName>
    <OUI>001349</OUI>
   <serialNumber>001349000000</serialNumber>
    <deviceType>P-2602HW-D1A</deviceType>
   <subName>Fred</subName>
   <subEmail>Fred.Dobbs@zyxel.cn</subEmail>
   <subTelephone>13665120000</subTelephone>
   <subPostal>226699</subPostal>
   <subAddress>SiPailou</subAddress>
   <subCity>Nanjing</subCity>
   <subState>Jiangsu</subState>
   <subCountry>China</subCountry>
  </Device>
</Template>
```

4.2.2 Editing a CSV File

You can import multiple devices to Vantage Access at one time using a CSV (Comma-Separated Values) file. You can view and edit CSV files in a spreadsheet application such as Microsoft Excel.

To import multiple devices at one time, you need to create an CSV file that contains the information (such as the device name, OUI, serial number and device type) for each compatible device. To download an example file, click **Provision Manager** > **Device Manipulation** > **Import Devices** > **Example.csv**. You can then modify it with your devices' information. The following shows an example for two ZyXEL compatible devices.

Figure 31 Sample Device CSV File in Microsoft Excel

Example

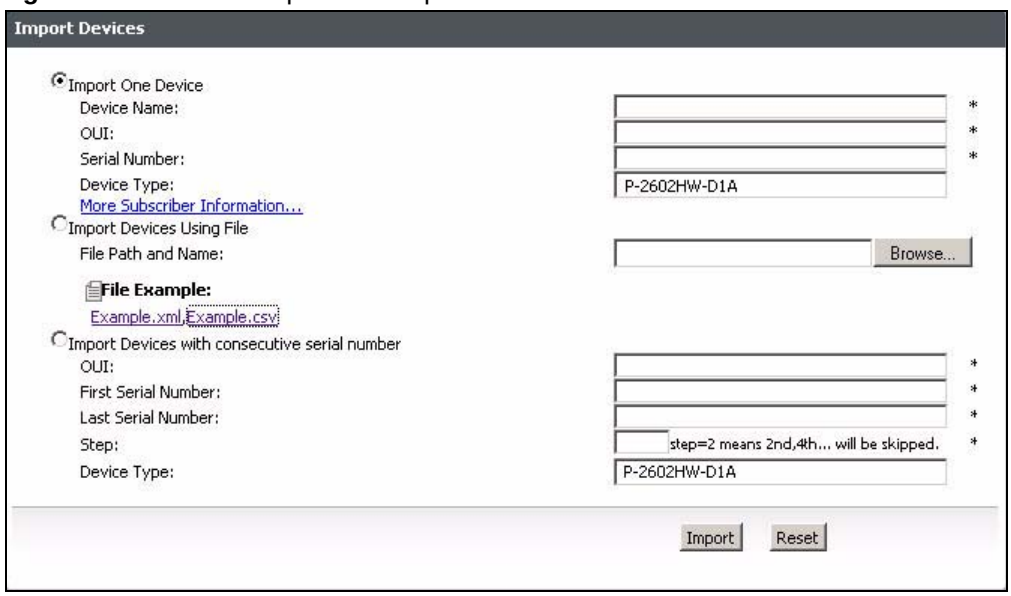
	A	B	C	D	E	F	G	H	I	J	K	L
1	deviceNam	OUI	SerialNum	deviceType	subName	subEmail	subTelephi	subPostal	subAddres	subCity	subState	subCountry
2	1.23E+09	00123a	0012300eC	Prestige 2(	Jacky	Jacky@zy	1.37E+10	226600	SiPailou	Nanjing	Jiangsu	China
3	1.23E+09	00123a	0012300aC	Prestige 2(	Danny	Danny@z	1.37E+10	226600	SiPailou	Nanjing	Jiangsu	China

4.2.3 Importing Devices

Follow the steps below to import the compatible device(s).

1. Log into Vantage Access as root or a manager and click the **Provision Manager** icon. Click **Device Manipulation** > **Import Devices** in the navigation panel.

Figure 32 Device Manipulation: Import Device



2. To import one device, select **Import One Device** and enter the device information in the fields provided. Click **More Subscriber Information** to see more fields.

   To import more than one device, select **Import Devices Using File** and specify the location and name of the XML or CSV file or click **Browse** to locate it.

   To import devices with consecutive serial numbers (for example 0012300000565, 0012300000566, 0012300000567, and so on) select **Import Devices with consecutive serial number**. Enter the serial number information and device information in the fields provided.

3 Click **Import**.

4 When the file import is successful, you can **Search** for the new entry or entries. The new devices are not yet registered. To complete the device registration, see Section 4.2.4 on page 96.

If you cannot see the new entry or entries, check the system logs and make sure the XML or CSV file format is correct.

Figure 33 Check New Device

4.2.4 Device Setup for Registration

You must configure the managed device to allow remote management from Vantage Access. Refer to the user's guide that comes with your compatible device for more information. The following shows how to enable TR-069 communication protocol between a ZyXEL compatible device and Vantage Access.

The following describes the steps to configure settings on a ZyXEL compatible device. Steps may vary depending on your device. Refer to the documentation that comes with your device.

1 To activate TR-069 on the ZyXEL compatible device, access the CLI and enter the following commands.

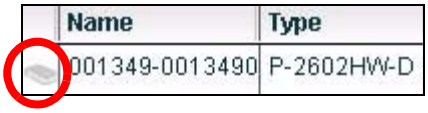
`wan tr load`	Enables TR-069 configuration.
`wan tr active 1`	Activates TR-069 remote management.
`wan tr acsUrl 172.25.21.174/TR069`	Sets the IP address of the Vantage Access server. For example, 172.25.21.174.
`wan tr periodicEnable 1`	Enables periodic information update to the server.
`wan tr informInterval 30`	Sets the information update time. For example, 30 seconds.
`wan tr debug on`	Enables TR-069 debug mode to view logs.
`wan tr save`	Saves the settings.
`wan tr reset`	Sets the device to register to the Vantage Access server right away.

2 Once connected to the network, the ZyXEL device automatically locates and registers to the Vantage Access server.

For initial setup, the registration process may take several minutes (depending on your network condition).

3 **Search** for the device and check its status. If the **Registered** icon displays ( ) and the device is an Internet Gateway device, device registration is successful and Vantage Access has stored the ZyXEL compatible device information to its database.

Figure 34 Device List: Check Registered Device



You can now select the device and use the **Provision** screens in Vantage Access to remotely configure this ZyXEL compatible device.

PART II
Provision Manager

This part contains the following chapters.

- Device Status (101)
- Task Monitor (107)
- Device History Logs (109)
- Device Manipulation (113)
- Template Management (119)
- Data Model Management (127)
- Device Provisioning (129)
- Short Cut (137)

5

Device Status

This chapter describes the **Device Status** screen that shows the system status of a selected device.

5.1 Viewing Device Status

The **Device Status** screen displays when you select a device in the device window. Use this screen to view detailed device information (such as the MAC address, firmware version, registration status, and subscriber information).

Log into Vantage Access and click the **Provision Manager** in the control panel, select a device in the Device List panel and click **Device Status** to display this screen. Labels displayed in this screen vary depending on the type of device you select.

Figure 35 Provision Manager > Device Status

The following table describes the labels in this screen.

Table 7 Provision Manager > Device Status

LABEL	DESCRIPTION
Check Status	Click this to display the current status of the device (online or offline).
Reboot	Click this to reboot the device.

Table 7 Provision Manager > Device Status (continued)

LABEL	DESCRIPTION
Retrieve	Click this to obtain the latest device status information from the Vantage Access database.
Device Information	
Model Name	This field displays the device model.
Serial Number	This field displays the device's individual factory serial number.
Firmware Version	This field displays the version of the firmware the device is currently using.
WAN Information	
DSL Mode	This field displays the WAN connection type.
MAC Address	This displays the device's MAC (Media Access Control) address.
IP Address	This field displays the WAN IP address of the device.
IP Subnet Mask	This field displays the subnet mask for the WAN IP address above.
Default Gateway	This field displays the IP address of the default gateway.
DSL	This field displays whether the DSL connection is **Up** or **Down**.
VPI/VCI	This field displays the VPI and VCI numbers for the DSL link.
LAN Information	
IP Address	This field displays the LAN IP address of the device.
IP Subnet Mask	This field displays the subnet mask of the LAN IP address above.
DHCP	This field displays the settings of the DHCP server on the device.
WLAN Information	
SSID	This field displays the name of the wireless network on the device.
Channel	This field displays the channel number for the wireless network.
WEP	This field displays the information of the WEP security setting.
WLAN	This field displays whether the WLAN interface is enabled or disabled on the device.
VOIP1 Status	
URI	This field displays the URI (Uniform Resource Identifier) to identify this VoIP connection.
VOIP2 Status	
URI	This field displays the URI (Uniform Resource Identifier) to identify this VoIP connection.
Data Model	
Device Summary	This field displays the configuration template this device is currently using.
Connection Request	
TCP ConnectionRequestURL	This field displays the URL of the device to which Vantage Access sends a TCP (Transmission Control Protocol) connection request.

Table 7 Provision Manager > Device Status (continued)

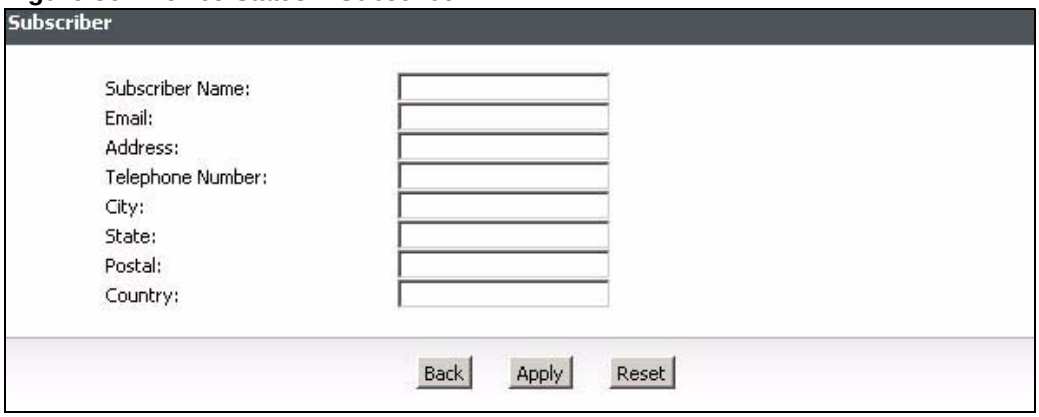
LABEL	DESCRIPTION
UDP ConnectionRequestURL	This field displays the URL of the device to which Vantage Access sends a UDP (User Datagram Protocol) connection request.
Protocol	This field displays whether Vantage Access uses **TCP** or **UDP** to request a connection.
ConnectionRequestUsername	This field displays the user name Vantage Access uses to access the device. This is required if you want Vantage Access to initiate a connection and access the device.
ConnectionRequestPassword	This field displays the password associated with the user name above.
Subscriber Information	
Edit ( )	Click this to edit this device's subscriber information. The **Device Status** > **Subscriber** screen displays.
Subscriber Name	This displays the subscribers name for this device.
Email	This displays the subscriber's e-mail address for this device.
Address	This displays the subscriber's street address for this device.
Telephone Number	This displays the subscriber's telephone number for this device.
City	This displays the subscriber's city for this device.
State	This displays the subscriber's state, region or province for this device.
Postal	This displays the subscriber's postal or zip code for this device.
Country	This displays the subscriber's country for this device.

5.1.1 The Device Status > Subscriber Screen

Use this screen to configure information about a device's subscriber. This information displays in the **Device Status** screen.

To display this screen, log into Vantage Access and click the **Provision Manager** in the control panel, select a device in the Device List panel, click **Device Status**, then click the edit icon ( ). The following screen displays.

Figure 36 Device Status > Subscriber



The following table describes the labels in this screen.

Table 8 Device Status > Subscriber

LABEL	DESCRIPTION
Subscriber Name	Enter the subscriber’s name for this device.
Email	Enter the subscriber’s e-mail address for this device.
Address	Enter the subscriber’s street address for this device.
Telephone Number	Enter the subscriber’s telephone number for this device.
City	Enter the subscriber’s city for this device.
State	Enter the subscriber’s state, region or province for this device.
Postal	Enter the subscriber’s postal or zip code for this device.
Country	Enter the subscriber’s country for this device.
Back	Click this to return to the previous screen without saving your changes.
Apply	Click this to save your changes and return to the previous screen.
Reset	Click this to reset the fields in this screen to their default values.

6

Task Monitor

This chapter describes the **Task Monitor** screen you use to monitor device configuration changes.

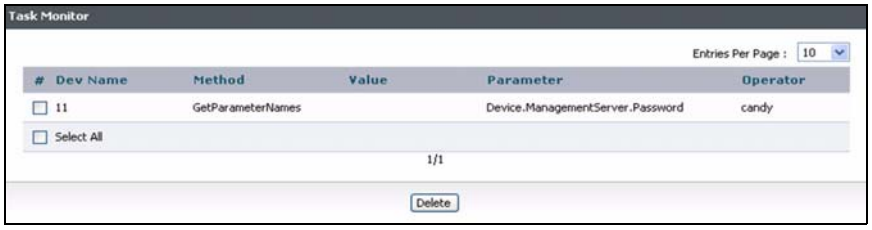
6.1 Task Monitor Overview

Use the **Task Monitor** screen to view a list of configuration changes waiting to be applied and updated on the selected device(s). You can display the list of configuration changes for one or a group of devices.

When the device modifies a parameter and notifies Vantage Access, the log is removed from the **Task Monitor** screen and added to the **History** screen (see Chapter 7 on page 109).

Click the **Provision Manager** icon in the control panel, then select a device or device group folder in the Device List. Then click **Task Monitor** in the navigation panel to display the screen.

Figure 37 Provision Manager > Task Monitor



The following table describes the labels in this screen.

Table 9 Provision Manager > Task Monitor

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the entry from the table. Click **Select All** to select all entries in this screen. **Note: Vantage Access will not make the changes to the device(s) once the entries are removed from the Task Monitor screen.**
Dev Name	This field displays the device's name.
Method	This field displays the configuration action.
Value	This field displays the new value for the parameter to be changed.

Table 9 Provision Manager > Task Monitor (continued)

LABEL	DESCRIPTION
Parameter	This field displays the name of the parameter to be changed.
Operator	This field displays the action operator of the device.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that screen.
Delete	Click **Delete** to remove the selected entry or entries.

7

Device History Logs

This chapter describes the **History** screen where you can display, query or purge device logs.

7.1 History Device Log Overview

Vantage Access stores five types of logs: Firmware, provision, system, notification and VendorConfigFile logs.

- Firmware logs record changes relating to the firmware of a managed device. Configure firmware changes in the **File Manager** > **Device Firmware** screens.
- Provision logs record changes in the provisioning of a managed device. Configure provisioning changes in the **Provision Manager** screens.
- System logs relate to the configuration changes and login status in Vantage Access. For example, you can check the log to see if the device file import is successful.
- Notification logs record changes to parameter values sent from a managed device.
- VendorConfigFile logs record changes relating to the vendor configuration file for a managed device. Configure vendor configuration files in the **File Manager** > **Vendor Config File** screens.

You can configure log settings in the **Monitor Manager** > **Log Management** > **Log Setting** screen.

7.1.1 Exporting Logs

The Vantage Access server automatically backs up device and system logs at midnight on a daily basis. You can still view the logs after the daily backup process until the specific time configured in the **Monitor Manager** > **Log Management** > **Log Setting** screen (the default is seven days). After this time period, Vantage Access server exports the logs. That is the Vantage Access compresses the logs in a ZIP file, saves the file to the download server.

You can also manually save the logs retrieved from the system by clicking the **Export** button in the **Provision Manager** > **History** or **Monitor Manager** > **Log Management** > **History** screen. Once you purge the logs, they are removed from the log screens.

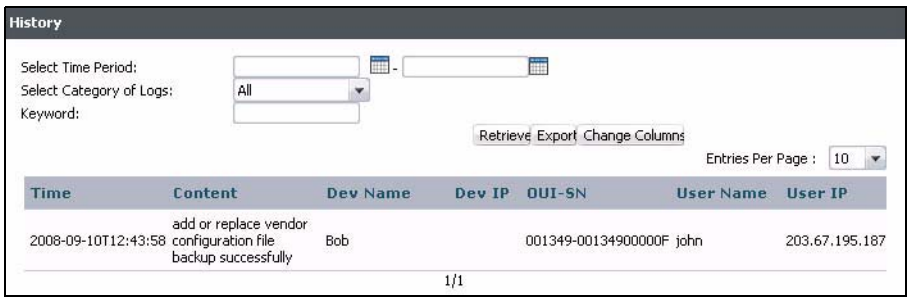
When the download server is down, the Vantage Access server automatically retries and saves the backup log files to the download server at midnight everyday.

7.2 Viewing Device Logs

You can view the logs for the managed device(s) in the **History** screen. If you log in as the root, you can view logs for all managed devices.

Click the **Provision Manager** icon in the control panel and select a device or device group folder in the Device Window. Then click **History** in the navigation panel. You can sort the entries in the table by clicking the headings.

Figure 38 Provision Manager > History



The following table describes the labels in this screen.

Table 10 Provision Manager > History

LABEL	DESCRIPTION
Select Time Period	Enter the start and end dates for the logs you want to see in the format: YYYY-MM-DD. Alternatively, click a calendar icon ( ) and select the date. The first calendar icon sets the start date, and the second calendar icon sets the end date.
Select category of logs	Select the type of logs to display or select **All** to display all logs.
Keyword	Enter a search term, if required. Vantage Access searches the **Dev Name**, **OUI-SN**, **Dev IP**, **User Name** and **User IP** fields. **Note: You do not need to enter a search term in this field.**
Retrieve	Click **Retrieve** to display the logs based on your search criteria.
Export	Click this to save the results in this screen as a CSV file to your computer.
Change Columns	Click this to specify the columns you want to display in this screen. The **Change Columns** screen displays.
Entries Per Page	Select how many entries you want to display in a page.
Time	This field displays the time the log was created.
Content	This field displays the log message.
Dev Name	This field displays the device name.
Dev IP	This field displays the device's IP address.
OUI-SN	This field displays the device's Organizationally Unique Identifier (OUI) and serial number (SN).
User Name	This field displays the name of the user who made the change.
User IP	This field displays the IP address of the user who made the change.
Next	Click **Next** to go to the next screen.

Table 10 Provision Manager > History (continued)

LABEL	DESCRIPTION
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number (1-9) and click **Go** to display the entries in that page.

7.2.1 The Change Columns Screen

Use this screen to choose the types of information that display in the **Provision Manager** > **History** screen.

Click **Provision Manager** > **History** > **Change Columns**. The following screen displays.

Figure 39 Provision Manager > History > Change Columns

The following screen describes the labels in this screen.

Table 11 Provision Manager > History > Change Columns

LABEL	DESCRIPTION
Time	Select this to have the log history screen display the time at which log events occurred.
Content	Select this to have the log history screen display log messages.
Dev Name	Select this to have the log history screen display the names of managed devices.
Dev IP	Select this to have the log history screen display managed devices' IP addresses.
OUI-SN	Select this to have the log history screen display managed devices' OUIs and serial numbers.
User Name	Select this to have the log history screen display managed devices' Organizationally Unique Identifiers (OUIs) and serial numbers (SNs).
User IP	Select this to have the log history screen display names of the users who made changes.
Back	Click this to return to the previous screen without saving your changes.
Apply	Click this to save your changes and return to the previous screen.
Reset	Click this to reset the fields in this screen to their default values.

8

Device Manipulation

This chapter describes the **Provision Manager** > **Device Manipulation** screens. These screens allow you to import and rename the devices managed by Vantage Access.

8.1 The Import Device Screen

This section describes the **Import Device** screen you use to register one or more devices.

8.1.1 Import Device Overview

You must register one or multiple devices to Vantage Access to allow remote management. The following outlines the general procedure.

1. To register one device, configure the device information in the **Import Device** screen. To register more than one device, edit an XML or CSV file containing the device information and upload to Vantage Access in the **Import Device** screen.
2. Configure the settings on a device to allow remote management from Vantage Access.

8.1.1.1 Device XML or CSV File

You can import one or multiple devices to Vantage Access at a time.

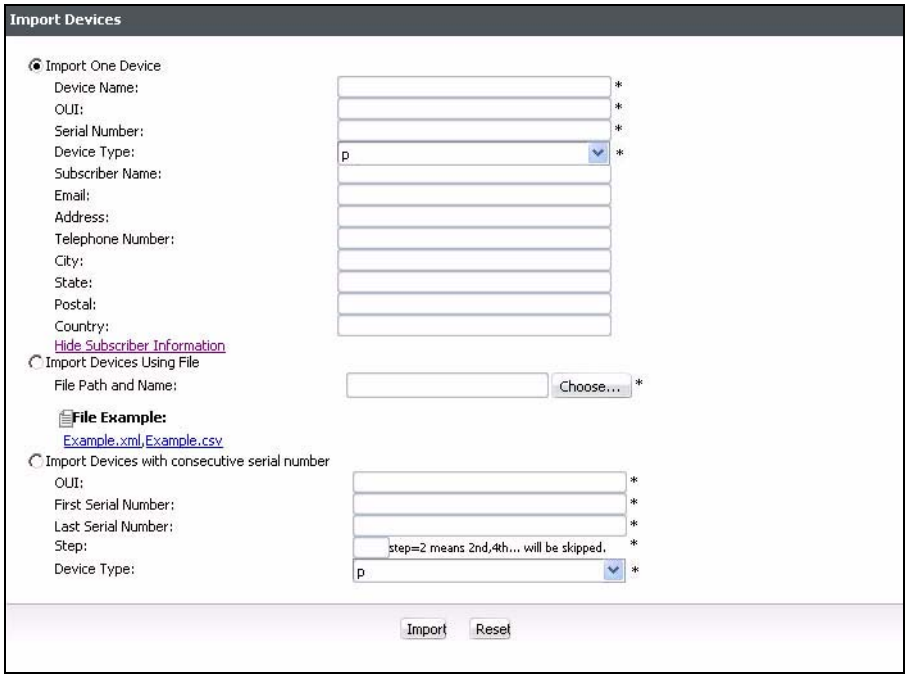
To import multiple devices at a time, you need to create an XML or CSV file that contains basic device information (such as the device name, OUI, serial number and device type) of the compatible devices. See Figure 30 on page 94 for an XML file example.

8.1.2 Importing One Device

Follow the steps below to register a device to Vantage Access.

1. Log into Vantage Access and click the **Provision Manager** icon.
2. In the navigation panel, click **Device Manipulation** > **Import Devices**.

Figure 40 Provision Manager > Device Manipulation > Import Device



3 Select **Import One Device** and enter the device information in the fields provided. Click **More Subscriber Information** to enter more details.

4 Click **Import**.

5 View the Device List panel to verify the device is registered to Vantage Access successfully.

8.1.3 Importing Devices Using XML or CSV File

1 Edit the XML or CSV file for your devices.

2 Log into Vantage Access and click the **Provision Manager** icon.

3 In the navigation panel, click **Device Manipulation** > **Import Devices**.

4 Select **Import devices with consecutive serial numbers**.

5 If you need an example XML file to modify, click **Example.xml** and save the file. If you need an example CSV file to modify, click **Example.csv** and save the file.

6 Select **Import Devices Using File** and specify the location and name of the XML or CSV file in the **File Path and Name** field, or click **Choose...** to locate it.

7 Click **Import**.

8 View the Device List panel to verify the device is registered to Vantage Access successfully.

8.1.4 Importing Devices with Consecutive Serial Numbers

1 Log into Vantage Access and click the **Provision Manager** icon.

2 In the navigation panel, click **Device Manipulation** > **Import Devices**.

3 Enter the device information in the fields provided.

4 If you want to import devices whose serial numbers are not entirely consecutive, enter a value in the **Step** field. For example, if you want to skip every second serial number, enter **2**.
5 Click **Import**.
6 View the Device List panel to verify the device is registered to Vantage Access successfully.

8.1.5 Verifying Device Import/Registration

When the file import is successful, you should see the new entry or entries in the Device List panel.

If you cannot see the new entry or entries, or the registered icon ( ) does not display, check the system logs and make sure the XML or CSV file format is correct.

Figure 41 Device Import > Verify in Device List

8.1.6 Device Setup for Registration

After you have uploaded the XML file for a device to the Vantage Access, you must then configure the device to allow remote management from the Vantage Access. This communication protocol is known as TR-069. Refer to the user's guide that comes with your device for more information.

The following describes the steps to configure settings on a ZyXEL device. Steps may vary depending on your device. Refer to the documentation that comes with your device.

1 To activate TR-069 on the ZyXEL device, access the CLI and enter the following commands.

`wan tr load`	Enable TR-069 configuration.
`wan tr active 1`	Activate TR-069 remote management.
`wan tr acsUrl 172.25.21.174/TR069`	Sets the IP address of the Vantage Access server. For example, 172.25.21.174.
`wan tr periodicEnable 1`	Enable periodic information update to the server.
`wan tr informInterval 30`	Set the information update time. For example, 30 seconds.
`wan tr debug on`	Enable TR-069 debug mode to view logs.

`wan tr save`	Saves the settings.
`wan tr reset`	Set the device to register to the Vantage Access server.

2 Once connected to the network, the ZyXEL device automatically locates and registers to the Vantage Access server.

For initial setup, the registration process may take several minutes (depending on your network condition).

3 Check the device status in the **Device List** panel. If the status is **Registered**, this indicates that device registration is successful and that Vantage Access has stored the ZyXEL device information to its database.

4 You can now select the device and use the **Provision** screens in Vantage Access to remotely configure this ZyXEL device.

8.2 Renaming Devices

This section describes how to rename one or more of the devices managed by Vantage Access.

8.2.1 Renaming a Single Device

To rename a single device, select the device in the Device List, right-click on the device and select **Rename**. The following screen displays.

Figure 42 Rename a Single Device

Enter the new **Device Name** and click **Save**.

8.2.2 Renaming Multiple Devices

To import a CSV file to rename multiple devices, click the **Provision Manager** tab, then **Device Manipulation** > **Rename Devices**. The following screen displays.

Figure 43 Device Manipulation > Rename Devices

If you need an example CSV file to modify, click **Example_RenameDevice.csv** and save the file.

In the **Source File** field, specify the location and name of the CSV file, or click **Choose...** to locate it. Then, click **Apply** to upload the CSV file and rename the devices. Alternatively, click **Reset** to clear the **Source File** field.

9

Template Management

This chapter describes the **Provision Manager** > **Management** screens you use to manage device templates.

9.1 Device Template Management Overview

On the Vantage Access computer, a device template contains parameter settings of a device. You can create new templates or load a template to devices.

Two types of templates are available: common and device specific templates.

- A common template file contains configuration settings that are the same across all devices. This allows you to apply the same parameter settings to all devices. For example, you can set the same system time and date on all devices.
- A device specific template contains parameter settings that are only for a specific device. You cannot load the template to another device since a device-specific template file contains device serial number and MAC address information.

9.2 Managing a Template

You can view all available templates, delete a template or modify template settings in the **Management** screen. To display the screen, log into the Web Configurator using a manager account and click the **Provision Manager** icon in the control panel. Then click **Template** > **Management**.

Figure 44 Provision Manager > Template > Management

After you have created a template file (using the **Template** > **Save As Template** screen), an entry is created in the **Management** screen.

The following table describes the labels in this screen.

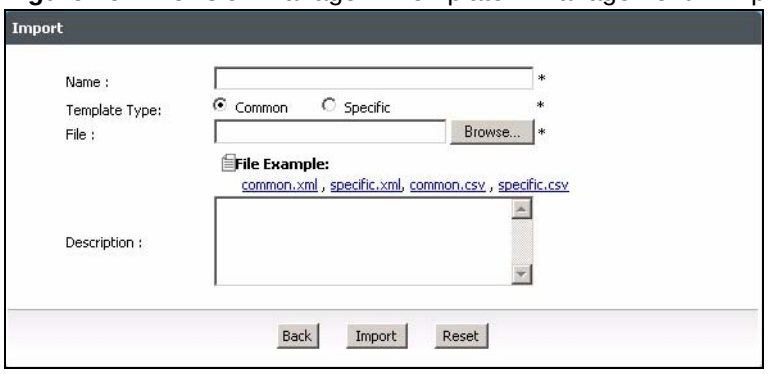
Table 12 Provision Manager > Template > Management

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this check box and click **Delete** to remove the selected template. Select **Select All** to mark all entries.
Template Name	This field displays the descriptive name of a template.
Time	This field displays the time the template was created.
Description	This field displays a short description about the template.
Modify	Click the modify icon to change the settings of the selected template.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that page.
Import	Click this to upload a template file from your computer to Vantage Access. See Section 9.2.1 on page 120 for more information.
Delete	Click **Delete** to remove the selected template(s).

9.2.1 Importing a Template

Use the **Import** screen to upload a template file (XML or CSV file) to Vantage Access. If you are not sure about the template format, download an example file by clicking a file link in the **File Examples** section of this screen. Modify it and then import it back using this screen.

Figure 45 Provision Manager > Template > Management > Import



The following table describes the labels in this screen.

Table 13 Provision Manager > Template > Management > Import

LABEL	DESCRIPTION
Name	This field displays the name of the template to which this parameter belongs.
Template Type	Select the template type of the file you are going to import in this screen. See Section 9.1 on page 119 for more information.
File	Type the full path or click **Browse** to locate the template file in your computer.
Description	Enter a short description about the template.
Back	Click **Back** to return to the previous screen.
Import	Click **Import** to upload the specified file to Vantage Access.
Reset	Click **Reset** to start configuring this screen again.

9.3 Editing a Template

Use the **Edit** screen to change the settings of a template you have created.

1. Log into the web configurator using a manager account and click the **Provision Manager** icon in the control panel.
2. Click **Provision** > **Management**.
3. Click the modify icon ( ) for the selected template entry.
4. An **Edit** screen displays.

Figure 46 Provision Manager > Template > Management > Edit

The following table describes the labels in this screen.

Table 14 Provision Manager > Template > Management > Edit

LABEL	DESCRIPTION
Template Name	This field displays the name of the template to which this parameter belongs.
Entries Per Page	Select how many entries you want to display in a page.
#	Select this check box to modify a parameter.
Parameter Name	This field displays the descriptive name of a parameter.
OUI-SN	This field displays for device-specific templates. This field displays the OUI and the serial number of the device.
Value	This field displays the parameter setting.
Modify	Click the modify icon to change the setting of the selected parameter.
Next	Click **Next** to go to the next screen.

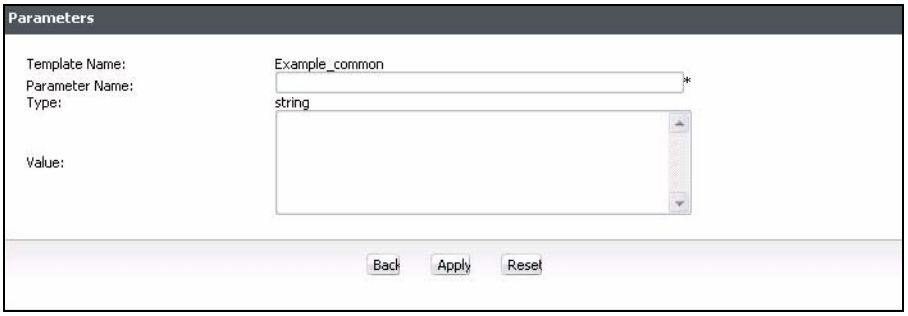
Table 14 Provision Manager > Template > Management > Edit (continued)

LABEL	DESCRIPTION
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that page.
Back	Click **Back** to return to the previous screen.
Add	Click **Add** to insert a new parameter.
Delete	Click **Delete** to remove the selected parameter.

9.3.1 Adding a New Parameter

Use the **Add Parameter** screen to insert a new parameter to a template. In the template **Edit** screen, click **Add** to display the **Add Parameter** screen.

Figure 47 Provision Manager > Template > Management > Edit > Add Parameter



The following table describes the labels in this screen.

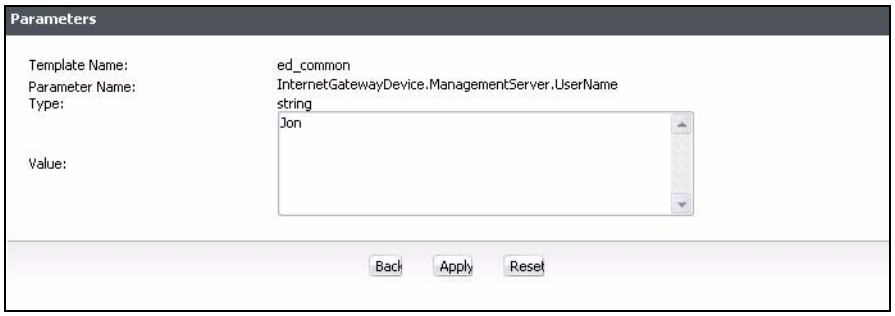
Table 15 Provision Manager > Template > Management > Edit > Add Parameter

LABEL	DESCRIPTION
Template Name	This read-only field displays the name of the template to which this parameter belongs.
Parameter Name	Enter a descriptive name for a parameter. You can enter up to 250 characters containing 0-9, a-z, A-Z, _ or - with no spaces.
OUI	This field is available in a device-specific template. Enter the OUI of the device. You can obtain the device OUI number in the **Device List** screen.
Serial Number	This field is available in a device-specific template. Enter the unique serial number of the device. You can obtain the device serial number in the **Device List** screen.
Type	Select the value type for the parameter.
Value	Specify the setting for the parameter.
Back	Click **Back** to return to the previous screen without saving the settings.
Apply	Click **Apply** to save the settings.
Reset	Click **Reset** to start configuring this screen again.

9.3.2 Modifying a Parameter Value

You can change the value of a parameter in a template in the **Modify Parameter** screen. In the template **Edit** screen, click the modify icon ( ) for the selected parameter to display the **Modify Parameter** screen. The **OUI-SN** field displays in the screen if you select a device-specific template.

Figure 48 Provision Manager > Template > Management > Edit > Modify Parameter



The following table describes the labels in this screen.

Table 16 Provision Manager > Template > Management > Edit > Modify Parameter

LABEL	DESCRIPTION
Template Name	This read-only field displays the name of the template to which this parameter belongs.
Parameter Name	This field displays the descriptive name for a parameter.
OUI-SN	This field is available in a device-specific template. This field displays the OUI and the unique serial number of the device.
Type	This field displays the value type for the parameter.
Value	Specify the setting for the parameter.
Back	Click **Back** to return to the previous screen without saving the settings.
Apply	Click **Apply** to save the settings.
Reset	Click **Reset** to start configuring this screen again.

9.4 Template Creation

The following outlines the steps to creating a new template.

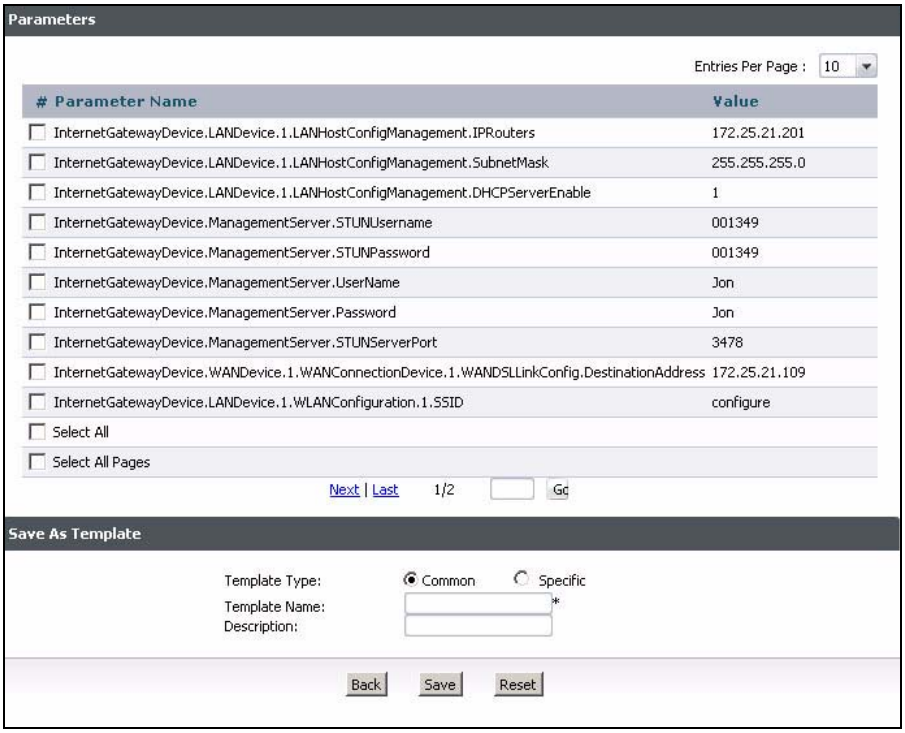
1. Select a registered device from the Device List.
2. Click **Template** > **Save As Template**.
3. Select the parameters of the device you want to include in a template.
4. Save the settings to a new template.

9.4.1 Selecting Parameters and Creating a Template

After selecting a device for a template, you can then select the parameters and create the new template in this screen. Select a registered device in the **Device List** and click **Template** > **Save as Template**.

After a new template is created, an entry is added in the **Management** screen (click **Template** > **Management**).

Figure 49 Template > Save as Template



The following table describes the labels in this screen.

Table 17 Provision Manager > Pre-Provision > Template > Save

LABEL	DESCRIPTION
Parameters	
Entries Per Page	Select how many entries you want to display in a page.
#	Select this check box to include the selected parameter in the new template.
Parameter Name	
Value	Specify the setting for the parameter.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that page.
Save As Template	
Template Type	Specify the template to be used for all devices (**Common**) or only for the selected device (**Specific**)

Table 17 Provision Manager > Pre-Provision > Template > Save (continued)

LABEL	DESCRIPTION
Template Name	Enter a descriptive name (up to 128 characters (0-9, a-z, A-Z, _ or - without spaces)) for the new template.
Description	Enter a short description (up to 256 characters (0-9, a-z, A-Z, _ or - without spaces)) for the new template.
Back	Click this to return to the previous screen. **Note: This button displays only when you are saving a group's template.**
Save	Click **Save** to create a new template with the settings.
Reset	Click **Reset** to start configuring this screen again.

9.5 Loading a Template

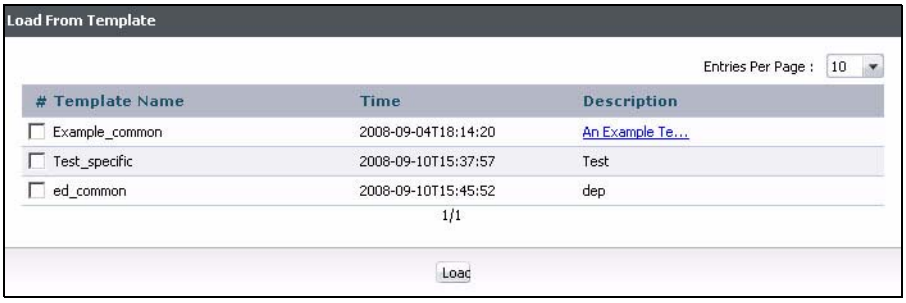
Applying a template replaces the current configuration on the specified device or all devices in a group.

Use the **Load From Template** screen to apply a template to a device or all devices in a group.

When loading a device-specific template, Vantage Access automatically applies the parameter settings to the device whose OUI and serial number matches the ones in the template.

Click **Template** > **Load Template**. Select a template in the list and click **Load**.

Figure 50 Template > Load Template



The following describes the labels in this screen.

Table 18 Template > Load Template

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this check box and click **Load** to apply the selected template. Select **Select All** to mark all entries.
Template Name	This field displays the descriptive name of a template.

Table 18 Template > Load Template

LABEL	DESCRIPTION
Time	This field displays the time the template was created.
Description	This field displays a short description about the template. Click this to see the whole description.
Load	Click **Load** to apply the template to the device(s).
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that page.

10

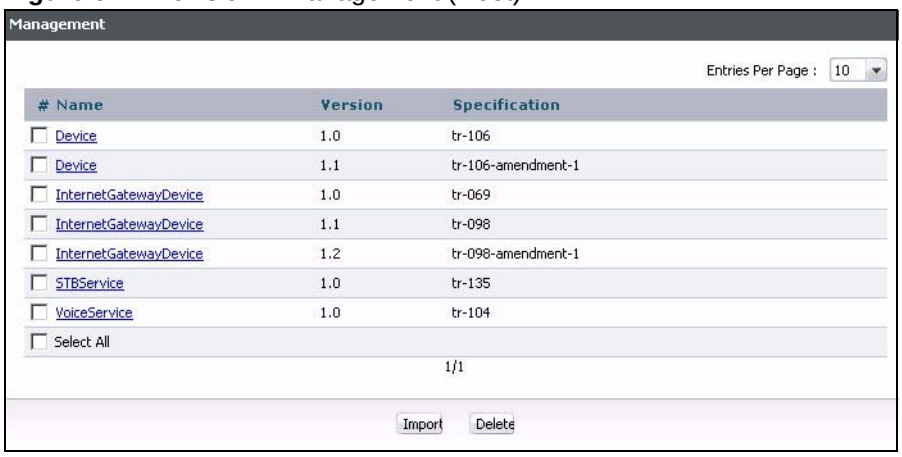
Data Model Management

This chapter discusses how to view and configure data models. Data models are standard configuration templates used by the managed devices. Only root can configure data models.

10.1 Managing a Data Model (Root)

This screen allows you to see the data models used by Vantage Access. To display the screen, log into the Web Configurator as root and click the **Provision Manager** icon in the control panel. Then click **Provision** > **Management**. The following screen displays.

Figure 51 Provision > Management (Root)



The following table describes the labels in this screen.

Table 19 Provision > Management (Root)

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this check box and click **Delete** to remove the selected data model. Select **Select All** to mark all entries.
Name	This field displays the data model's name. Click a data model name to download the data model.
Version	This field displays the data model's version number.
Specification	This field displays the specification to which this data model applies.

Table 19 Provision > Management (Root)

LABEL	DESCRIPTION
Import	Click this to upload a data model to Vantage Access. The **Import Data Model** screen displays.
Delete	Select a data model and click this to delete a data model from Vantage Access. **Note: Once a data model has been deleted, it cannot be retrieved. You must import it again.**

10.1.1 The Import Data Model Screen

Use this screen to upload a data model to Vantage Access. To display the screen, log into Vantage Access as root and click **Provision Manager**. Then click **Provision** > **Management** > **Import**. The following screen displays.

Figure 52 Provision > Management (Root) > Import Data Model

The following table describes the labels in this screen.

Table 20 Provision > Management (Root) > Import Data Model

LABEL	DESCRIPTION
Source File	Specify the location and name of the XML file, or click **Choose...** to locate it.
File Example	Click one of the links to download an example data model of the specified type in XML format.
Back	Click **Back** to return to the previous screen without saving the settings.
Apply	Click **Apply** to save the settings.
Reset	Click **Reset** to start configuring this screen again.

11

Device Provisioning

This chapter introduces the **Provision** screens and shows you how to configure device settings through Vantage Access.

11.1 Device Provision Overview

The Provision screens are available for manager accounts only. The Provision screens available for root are covered in Chapter 10 on page 127

11.2 Device Provision

Use this method to configure one or more devices.

1. Log into Vantage Access using a manager account and click the **Provision Manager** icon in the control panel.
2. Select a device or group of devices in the Device List window.
3. Click **Provision** in the navigation panel.

11.2.1 Provisioning Unregistered Devices

For unregistered devices, the **Provision Manager** > **Data Model** screen appears.

Figure 53 Provision Manager > Provision (Unregistered Device)

The table below describes the fields in the screen for unregistered devices.

Table 21 Provision Manager > Provision > Unregistered Device

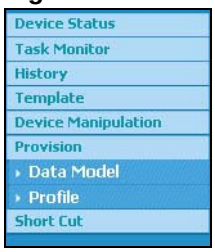
TABLE HEADING	DESCRIPTION
Root Object	
InternetGateway Device	This CPE (customer premise equipment) device is either a broadband router or a broadband access device able to be managed by the Vantage Access. Select **Version 1.0** to apply TR-069 settings. Select **Version 1.1** to apply TR-106 amendment 1 settings. Select **Version 1.2** to apply TR-098 amendment 1 settings.
Device	This is a CPE device on your local network connected to a gateway, router or bridge. Select **Version 1.0** to apply TR-106 settings to the devices. Select **Version 1.1** to apply TR-111 settings to the devices.
Service Object	
STBService	Select this configuration template for set-top box devices and specify a version number. The default **Version 1.0** applies TR-135 settings to the devices.
VoiceService	Select this configuration template for VoIP devices and specify a version number. The default **Version 1.0** applies TR-104 settings to the devices.
Apply	Click **Apply** to save the changes.
Rest	Click this to return the fields in this screen to their last-saved details.

Select the appropriate device type and version according to your device type. Then click **Apply** to update the **Data Model** and **Profile** menu lists.

11.2.2 Provisioning Registered Devices

You cannot provision registered devices. You can only view the data model assigned to the device. A proper data model is assigned to a device when the device first connects to Vantage Access and completes the registration successfully. Select a registered device in the Device List and then select **Provision**. The following menu options display.

Figure 54 Provision Manager > Provision (Registered Device)

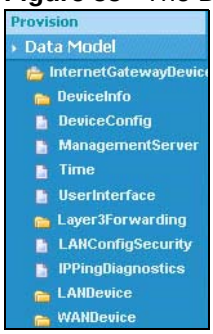


Click **Data Model** to view the standard data model assigned to the device (see Section 11.2.3 on page 130).

11.2.3 Data Model

The data model tree displays when you select a registered device in the Device List and click **Provision** > **Data Model**.

Figure 55 The Data Model Tree



The data model tree contains all the parameter sets ( ) related to the given data model. When a parameter set has subsets, a folder icon ( ) displays.

When you click a parameter set icon, a list of parameters displays.

11.2.3.1 Parameter List

A parameter list screen displays the parameters in a data model parameter set. The following shows an example.

Figure 56 Provision > Example Data Model Parameter List

DeviceInfo
Retrieve
Parameter Name
Value
Attribute
Time
Manufacturer ZyXEL Notification off 2008-09-03T14:15:08
ManufacturerOUI 001349 Notification off 2008-09-03T14:15:08
ModelName P-2602HW-D1A Notification off 2008-09-03T14:15:08
Description P-2602HW-D1A Notification off 2008-09-03T14:15:08
ProductClass P-2602HW-D1A Notification off 2008-09-03T14:15:08
SerialNumber 001349171717 Notification off 2008-09-03T14:15:08
HardwareVersion P-2602HW-D1A Notification off 2008-09-03T14:15:08
SoftwareVersion V3.40(ADQ.4)b... Notification off 2008-09-03T14:15:08
ModemFirmwareVersion TI AR7 06.00.... Notification off 2008-09-03T14:15:08
EnabledOptions zyxel Notification off 2008-09-03T14:15:08
AdditionalHardwareVersion Hard_v3.0 Notification off 2008-09-03T14:15:08
AdditionalSoftwareVersion Softwar_3.0 Notification off 2008-09-03T14:15:08
SpecVersion 1.0 Notification off 2008-09-03T14:15:08
ProvisioningCode Notification off 2008-09-03T14:15:08
UpTime 206 Notification off 2008-09-03T14:15:08
FirstUseDate 2000-01-01T05... Notification off 2008-09-03T14:15:08
DeviceLog 0 | 01/01/200... Notification off 2008-09-03T14:15:08
VendorConfigFileNumberOfEntries 1 Notification off 2008-09-03T14:15:08

The following table describes the labels in this screen.

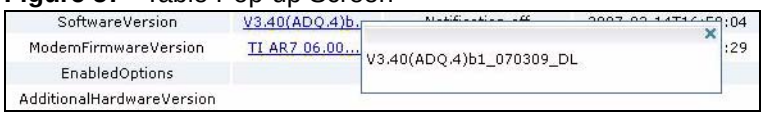
Table 22 Provision > Example Parameter List

LABEL	DESCRIPTION
Retrieve	Click this to update the screen from the information in the database.
Parameter Name	This displays the name of the parameter as defined in the data model.
Value	This displays the parameter's value.
Attribute	This displays the attribute setting associated with the parameter.
Time	This displays the date and time that the parameter was altered, in the format yyyy-mm-ddThh-mm-ss. The character "T" separates the date (yyyy-mm-dd) and time (hh-mm-ss).
Modify	Click this icon to edit a parameter's **Attribute** (for read-only parameters) or **Value** (for configurable parameters). See Section 11.2.4 on page 132.

11.2.3.2 Table Pop-up Screen

If the text is too long to fit into a table column, Vantage Access displays the text as a link. Click on the link to display a pop-up screen that shows the text in full. The following shows an example.

Figure 57 Table Pop-up Screen



11.2.4 Configuring CPE Methods

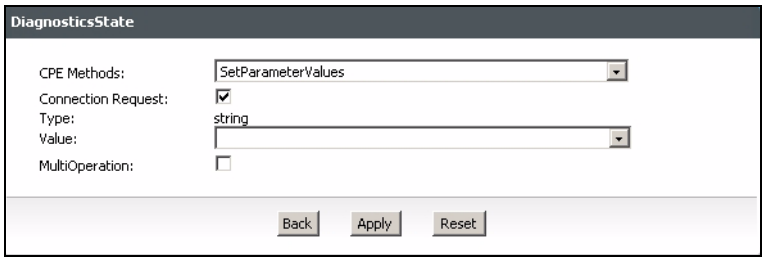
CPE (Customer Premises Equipment) methods are functions the managed devices support to modify or send back parameter information. Only the Vantage Access server is allowed to send requests to the devices to execute these functions. The Vantage Access server can request information from or configure settings on the devices.

To configure CPE method settings for all the parameters in a **Data Model** screen, click the modify icon ( ) in the right-hand corner of the screen.

To configure the CPE method settings for a parameter, click the modify icon (or) next to the selected parameter in any **Single Device** screen. Fields in this screen vary depending on the option you select in the **CPE Methods** field.

The following shows a screen example.

Figure 58 Provision > CPE Methods



The following table describes the labels in this screen.

Table 23 Provision > CPE Methods

FIELD	DESCRIPTION
CPE Methods	Select **SetParameterValues** to change the value of the parameter on the device. Select **GetParameterValues** to obtain information of one or more parameters from the device. Select **GetParameterNames** to obtain the names of the parameter(s) on the device. Select **SetParameterAttribute** to change the settings of one or more parameters on the device. Select **GetParameterAttribute** to obtain information of one or more parameters from the device. Select **AddObject** to create a new instance of the selected parameter. Select **DeleteObject** to remove the specified instance of the selected parameter.
Connection Request	Select this to have the device initiate a connection to Vantage Access immediately when Vantage Access requests. It is recommended to select this if you have disabled the Periodic Inform feature (**PeriodicInformEnable**=**False**) on the device. Otherwise, Vantage Access will fail to send any settings to the device. See Figure 71 on page 145.
NextLevel	This field displays when you select **GetParameterNames** in the **CPE Methods** field. Select this option to set the device to reply with a one-level (or relative) path for the parameter name. Clear this check box to set the device to reply with a complete (or full) path for the parameter name.
Attribute	This field displays when you select **SetParameterAttribute** in the **CPE Methods** field. Select **Active Notification** to set the device to send a notification message to the Vantage Access server immediately when the value(s) of the parameter(s) is changed. Select **Notification Off** to set the device not to return a notification when the value(s) of the parameter(s) is changed. Select **Passive Notification** to set the device to send a notification message to the Vantage Access server in the next session when the value(s) of the parameter(s) is changed.
Type	This field displays when you select **SetParameterValues** in the **CPE Methods** field. This read-only field displays the type and number of characters you can enter for the parameter value in the field below. For example, **string(256)** indicates that you can enter up to 256 printable ASCII characters
Value	Enter a new value for the parameter in this text box.
MultiOperation	Select this if it is allowed to include multiple parameter settings in a provisioning packet. Select this to reduce the time for provisioning from Vantage Access to the device. Otherwise, you can clear this to include only one parameter setting in a provisioning packet.
Back	Click **Back** to return to the previous screen. All unsaved changes will be lost.
Apply	Click **Apply** to save the changes.
Reset	Click **Reset** to start configuring this screen again.

Labels displayed in the Provision screens vary depending on settings in the InternetGatewayDevice field.

11.2.5 Profile

Use this menu to quickly find and configure specific parameter settings for an unregistered device. You can also use this menu to view existing profile settings for a registered device.

This is an example to show you how to define profiles for an unregistered device.

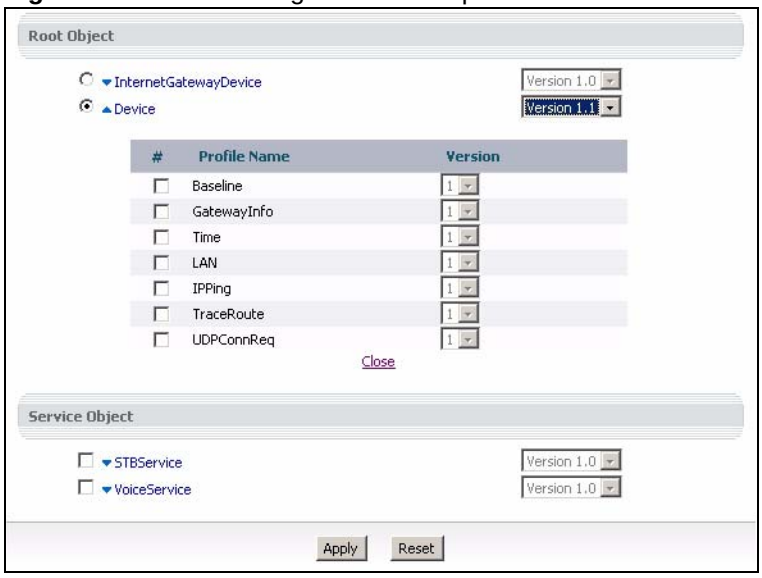
1 Select an unregistered device in the Device List and then select **Provision** > **Data Model**. The screen displays as shown.

Figure 59 Profile Configuration Example: Specifiy the Data Model

2 Select an appropriate object and version. For example, **Device** and **Version 1.1**. The additional profile list appears.

3 Select the profile(s) you want to show in the **Profile** screen. For example, select **LAN**. Then click **Apply**.

Figure 60 Profile Configuration Example: Addisional Profile List under a Data Model

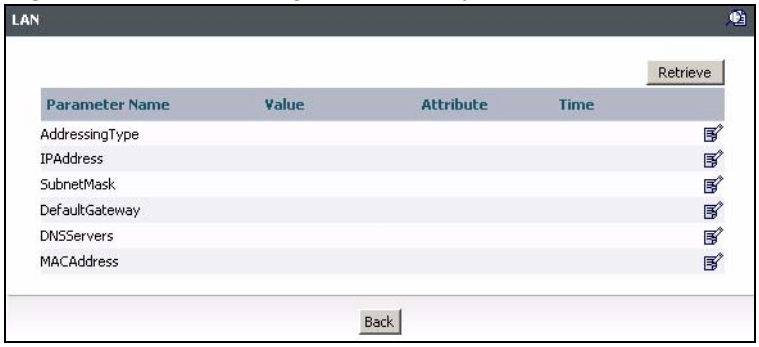


4 Click **Provision** > **Profile**, the profile you just configured appears. Click **LAN** to display the related objects in the configuration window.

Figure 61 Profile Configuration Example: Profile Submenus

5 Click an object name. For example, **Device.LAN**. The related parameter list appears.

Figure 62 Profile Configuration Example: Parameter List



6 See Section 11.2.3.1 on page 131 and Section 11.2.4 on page 132 for how to configure the parameters.

11.3 Device Configuration Update Request

When you change the device settings in Vantage Access, a configuration update request is generated for the device(s). At specified intervals, the Vantage Access server sends the request to the device(s) which then updates its configuration based on the parameter information received.

You can view the request information in the **Task Monitor** screen. Refer to Chapter 6 on page 107 for more information.

12

Short Cut

This chapter discusses how to view, add and delete short cuts. Short cuts let you easily apply parameters (settings).

12.1 Short Cut Overview

A short cut uses a brief name to avoid needing to jump into complex device configuration submenus. For example, you can configure the parameter value of **InternetGatewayDevice.DeviceInfo** in the **Short Cut** screen. Otherwise, you have to click **Data Model**, **InternetGatewayDevice**, and then the **DeviceInfo** screen to configure its value.

Parameters are grouped in objects. An object is a list of parameters.

12.1.1 Managing Short Cuts

This screen allows you to view the short cuts you have configured. To display the screen, log into the Web Configurator using a manager account and click the **Provision Manager** icon in the control panel. Then click **Short cut** > **Operation**.

Figure 63 Provision > Short cut > Operation

The following table describes the labels in this screen.

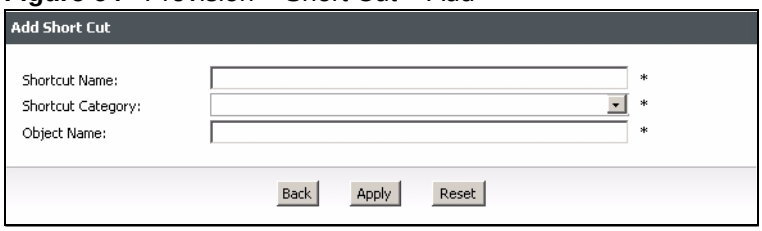
Table 24 Provision > Short cut > Operation

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this check box and click **Delete** to remove the selected short cut.
Shortcut Name	This field displays the descriptive name of this short cut.
Category	This field displays the category name to which this short cut belongs.
Object Path	This field displays the path of where the short cut takes you to.
Add	Click this to add a short cut. The **Add Short Cut** screen displays.
Delete	Select a short cut and click this to delete it from Vantage Access.

12.1.2 Add a Short Cut

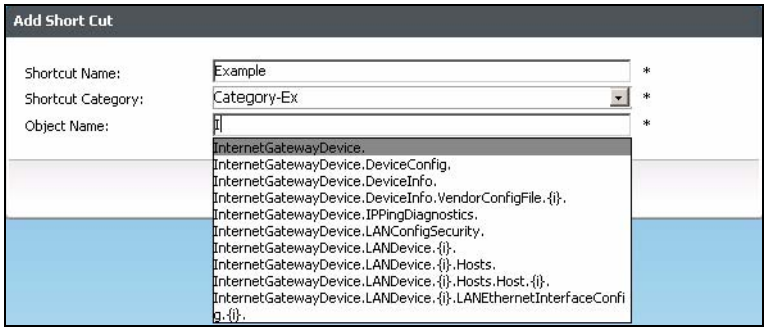
Use this screen to configure a new short cut. To display the screen, log into Vantage Access using a manager account and click **Provision Manager**. Then click **Short cut** > **Operation** > **Add**.

Figure 64 Provision > Short Cut > Add



The following table describes the labels in this screen.

Table 25 Provision > Short Cut > Add

LABEL	DESCRIPTION
Shortcut Name	Enter a descriptive name (up to 128 characters (0-9, a-z, A-Z, _ or - without spaces)) for the new short cut.
Shortcut Category	Enter a category name for this short cut to group similar short cuts. You can also select an existing category for this short cut, if any.
Object Name	Enter the name of a valid object for this short cut. You can also enter part of an object name's beginning charactors, all the related objects will display in a list. Then you can select the object you want to use here. An example is shown next. **Figure 65** Provision > Short Cut > Add > Object Name List 
Back	Click **Back** to return to the previous screen without saving the settings.
Apply	Click **Apply** to save the settings.
Reset	Click **Reset** to start configuring this screen again.

PART III
Internet Gateway Device 1.0 (TR-069)

This part contains the following chapters.

- General Device Setup (141)
- LAN Device (153)
- WAN Device (171)

13

General Device Setup

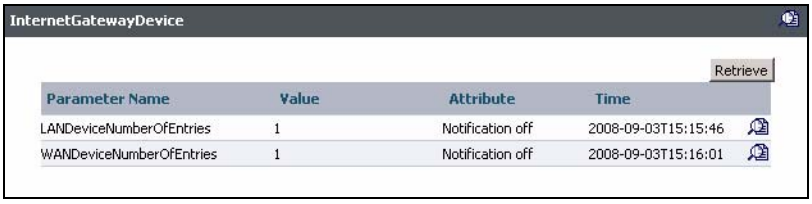
This chapter describes the general **Configuration** screens you display to view and set basic device settings.

13.1 Internet Gateway Device

You can view the number and type of interfaces on a device.

1. Log into Vantage Access using a manager account and click the **Provision Manager** icon in the control panel.
2. Select a device in the Device List window.
3. Click **Provision** > **InternetGatewayDevice**.

Figure 66 TR-069: InternetGatewayDevice



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

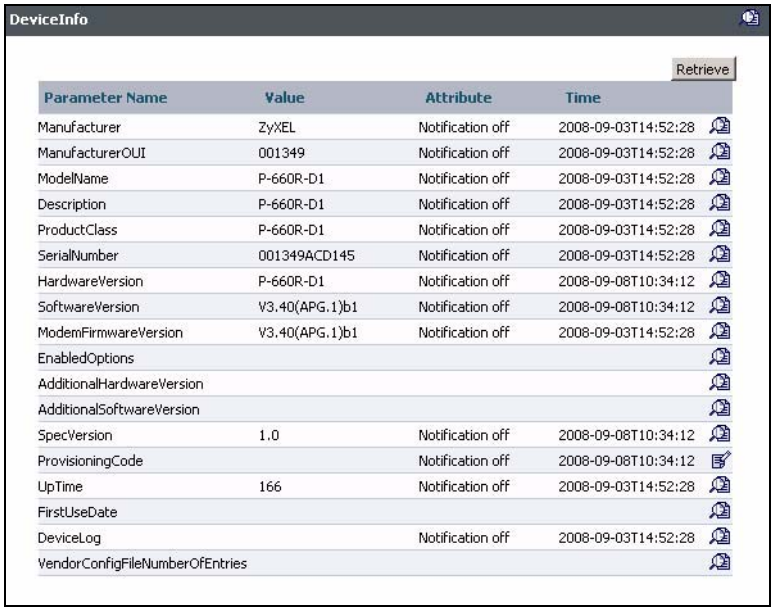
Table 26 TR-069: InternetGatewayDevice

PARAMETER NAME	VALUE
LANDeviceNumberOfEntries	This field displays the number of LAN interfaces on the selected device.
WANDeviceNumberOfEntries	This field displays the number of WAN interfaces on the selected device.

13.2 Device Information

Click **InternetGatewayDevice** > **DeviceInfo.** This screen displays the general information of the selected device.

Figure 67 TR-069: DeviceInfo



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 27 TR-069: DeviceInfo

PARAMETER NAME	VALUE
Manufacturer	This is the name of the company that produced this device.
ManufacturerOUI	This field displays the six-hexadecimal-digit OUI (Organization Unit Identifier) of the company. The OUI is a unique number assigned by the IANA. Devices produced by the same company have the same hard-wired OUI.
ModelName	This field displays the device model name.
Description	This field displays additional information about the device.
ProductClass	This field identifies the product class or product over which the **SerialNumber** parameter is unique.
SerialNumber	This field displays the device serial number.
HardwareVersion	This field displays the hardware model name.
SoftwareVersion	This field displays the firmware version number.
ModemFirmware Version	This field displays the modem firmware version number.
EnabledOptions	This field displays the name of the options enabled on the device.
AdditionalHardwa reVersion	This field displays the available information of the additional hardware version.
AdditionalSoftwar eVersion	This field displays the available information of the additional software version.
SpecVersion	This field displays the specification version implemented on the device.
ProvisioningCode	The provisioning code is used by the service provider to identify specific parameter settings for the device. Enter the identifier of the CPE service provider or provisioning information. You can enter up to 64 characters (use only A-Z, 0-9 and “.” with no spaces allowed).

Table 27 TR-069: DeviceInfo (continued)

PARAMETER NAME	VALUE
UpTime	This field displays the time (in seconds) since the device was last restarted.
FirstUseDate	This field displays the time and date the device first established a network connection.
DeviceLog	Enter additional information for this device.
VendorConfigFile NumberOfEntries	This field displays the number of configuration files.

13.3 Device Configuration

Display the **DeviceConfig** screen to view general information about the configuration file on a device.

Click **InternetGatewayDevice** > **DeviceConfig.**

Figure 68 TR-069: DeviceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 28 TR-069: DeviceConfig

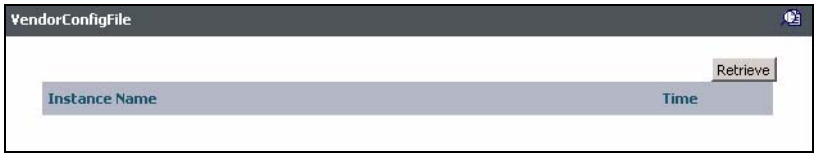
PARAMETER NAME	VALUE
PersistentData	This field displays the configuration data that must remain intact after a device system reboot.
ConfigFile	This field displays the name of the vendor specific configuration file used for the device.

13.4 Vendor Configuration File

The **VendorConfigFile** screen displays the name of the vendor configuration file and the time it was first applied on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Click **InternetGatewayDevice** > **DeviceInfo** > **VendorConfigFile.** Click on a file name to display detailed information.

Figure 69 TR-069: VendorConfigFile



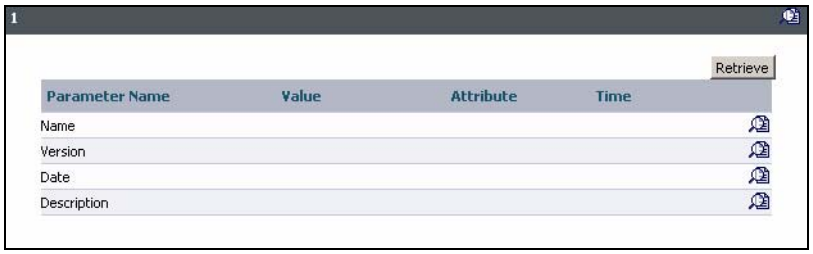
13.4.1 Vendor Configuration File Details

Use this screen to find detailed vendor configuration information.

You can display this screen using one of the following methods:

- click a file name in the **VendorConfigFile** screen
- click **InternetGatewayDevice** > **DeviceInfo** > **VendorConfigFile** and click a number.

Figure 70 TR-069: VendorConfigFile: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 29 TR-069: VendorConfigFile: Details

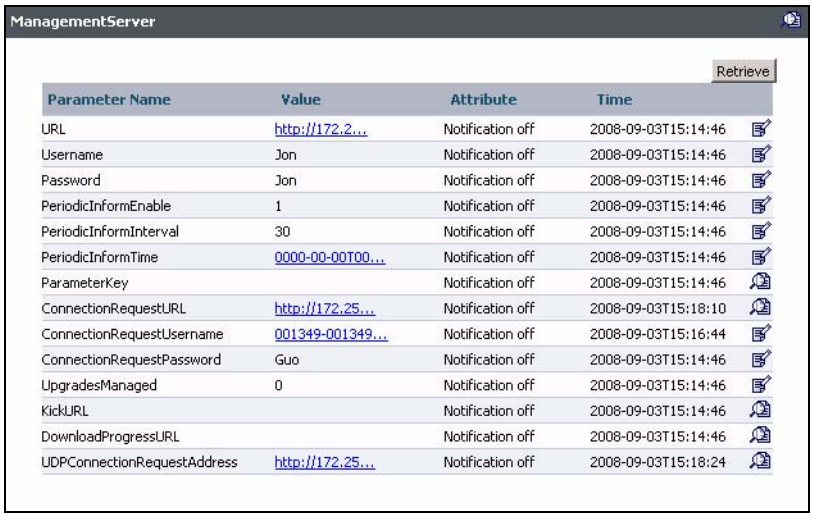
PARAMETER NAME	VALUE
Name	This field displays the name of the vendor configuration file applied to the device.
Version	This field displays the version number of the vendor configuration file.
Date	This field displays the time and date the vendor configuration file was applied on the device.
Description	This field displays a description about the vendor configuration file.

13.5 Management Server

Use the **Management Server** screen to configure settings on the device that connects to the Vantage Access server.

Click **InternetGatewayDevice** > **ManagementServer.**

Figure 71 TR-069: ManagementServer



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 30 TR-069: ManagementServer

PARAMETER NAME	VALUE
URL	This field displays the address of the Vantage Access server to which the device connects for remote management. For example, “http://www.zyxel.com/TR069”.
Username	This field displays the user name the device uses to access Vantage Access.
Password	This field displays the password (up to 256 alphanumeric characters) associated with the user name above. **Note: You must configure the same access user name and password on the device and the Vantage Access server.**
PeriodicInformEnable	This field displays **true** to indicate that the device is set to regularly send device information updates to Vantage Access. This field displays **false** to indicate that this feature is disabled. In this case, you must then manually update device information changes.
PeriodicInformInterval	This field is applicable when the **PeriodicInformEnable** field is **1**. This field displays the time (in seconds) the device is to wait before sending device request information updates to Vantage Access.
PeriodicInformTime	This field is applicable when the **PeriodicInformEnable** field is **1**. This field displays the reference time and date the device is to initiate the information updates. The time in the format yyyy-mm-ddThh:mm:ss. The character “T” separates the date (yyyy-mm-dd) and time (hh-mm-ss).
ParameterKey	This field displays the parameter that has changed as a result of the most recent information update.
ConnectionRequestURL	This field displays the URL of the device to which Vantage Access sends a connection request.
ConnectionRequestUsername	This field displays the user name Vantage Access uses to access the device. This is required if you want Vantage Access to initiate a connection and access the device.

Table 30 TR-069: ManagementServer (continued)

PARAMETER NAME	VALUE
ConnectionRequestPassword	This field displays the password associated with the user name above.
UpgradesManaged	This field displays **1** to show that the Vantage Access may upgrade firmware on the device. This field displays **0** to indicate that remote firmware upgrade through Vantage Access is disabled.
KickURL	This field displays the URL on the LAN from which the device can initiate a Kick request.
DownloadProgressURL	This field displays the URL of a web site on the LAN to which a user's web browser is redirected to display the file transfer progress of the device.

13.6 Time

Use the **Time** screen to configure time settings (such as the network time server and time zone) on the device.

Click **InternetGatewayDevice** > **Time.**

Figure 72 TR-069: Time

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 31 TR-069: Time

PARAMETER NAME	VALUE
NTPServer1 .. 5	This field displays the IP address or host name of the time server the device is to use to update the system time. For example, "http://www.zyxel.com".
CurrentLocalTime	This field displays the current system time on the device.
LocalTimeZone	This field displays the time offset from the UTC (Universal Time Coordinate). For example, +08:00.
LocalTimeZoneName	This field displays the name of the local time zone.

Table 31 TR-069: Time (continued)

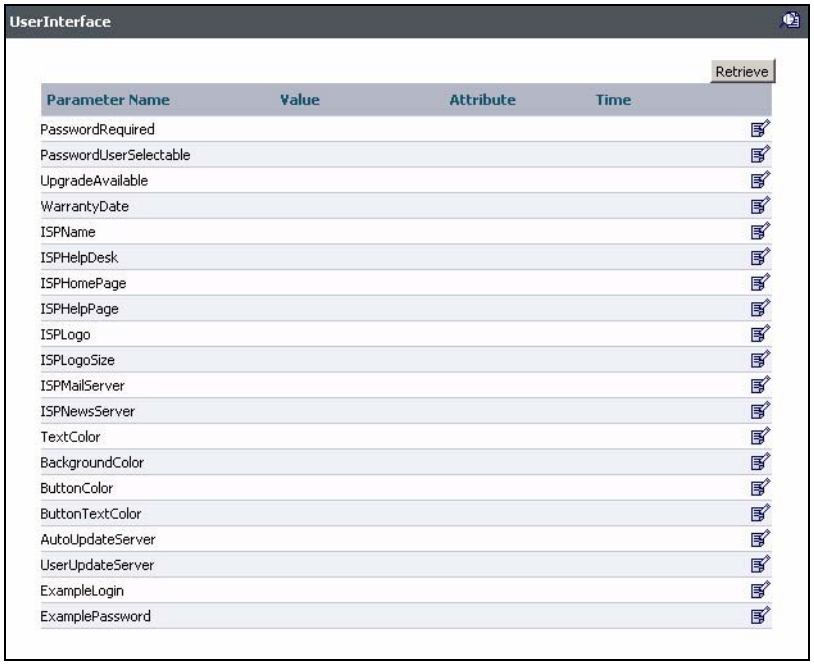
PARAMETER NAME	VALUE
DaylightSavingsUsed	This field displays **1** to indicate that daylight savings time is enabled on the device. This field displays **0** if this feature is disabled.
DaylightSavingsStart	This field is applicable if the **DaylightSavingsUsed** field is **1**. This field displays the starting date of the daylight savings time in the format 0000-00-00T00:00:00.
DaylightSavingsEnd	This field is applicable if the **DaylightSavingsUsed** field is **1**. This field displays the end date of the daylight savings time in the format 0000-00-00T00:00:00.

13.7 User Interface

Use the **UserInterface** screen to configure remote management settings to access the web configurator on the device.

Click **InternetGatewayDevice** > **UserInterface** to display the screen as shown.

Figure 73 TR-069: UserInterface



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 32 TR-069: UserInterface

PARAMETER NAME	VALUE
PasswordRequired	This field displays **1** if a password is required to log into the web configurator on the device. This field displays **0** if a password is not required.
PasswordUserSelectable	This field displays **1** if a user can specify a different password for Auto-configuration on the device; otherwise it displays **0**.
UpgradeAvailable	This field displays **1** to allow a user to view the upgrade information on the device; otherwise it displays **0**.
WarrantyDate	This field displays the time the warranty on the device expires.
ISPName	This field displays the name of your Internet Service Provider (ISP).
ISPHelpDesk	This field displays the telephone number of your ISP's help desk.
ISPHomePage	This field displays the website address of your ISP's home page.
ISPHelpPage	This field displays the website address of your ISP's online support web page.
ISPLogo	This field displays the base64 encoded character for your ISP's logo graphic. The graphic can be a GIF or JEPG file smaller than 4095 bytes.
ISPLogoSize	This field displays the size of the logo graphic file.
ISPMailServer	This field displays the address of your ISP's mail server.
ISPNewsServer	This field displays the address of your ISP's news server.
TextColor	This field displays the color (in six-character RGB number) of the text in the web configurator. For example, FFFFFF means white.
BackgroundColor	This field displays the color (in six-character RGB number) of the background in the web configurator. For example, FFFFFF means white.
ButtonColor	This field displays the color (in six-character RGB number) of the buttons in the web configurator. For example, FFFFFF means white.
ButtonTextColor	This field displays the color (in six-character RGB number) of the text on the buttons in the web configurator. For example, FFFFFF means white.
AutoUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen shows **1** (see Section 13.5 on page 144). This field displays the address of the server the device is to check for new firmware. If a new firmware is available, the device is to update the firmware automatically.
UserUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen shows **0** (see Section 13.5 on page 144). This field displays the address of the server a user can check for new firmware updates available for the device.
ExampleLogin	This field displays the correct username format. This is to show users the correct format to enter.
ExamplePassword	This field displays the correct password format. This is to show users the correct format to enter.

13.8 Layer3 Forwarding

Use the **Layer3Forwarding** screen to view the current layer 3 forwarding status and the number of forwarding entries on the device.

Select a registered device in the Device List window and click **Provision** > **InternetGatewayDevice** > **Layer3Forwarding.**

Figure 74 TR-069: Layer3Forwarding

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 33 TR-069: Layer3Forwarding

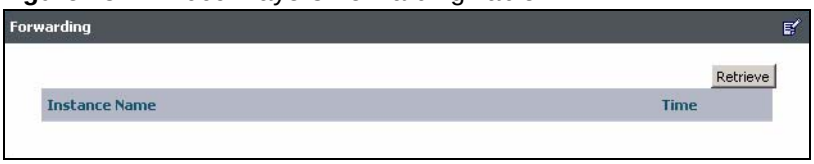
PARAMETER NAME	VALUE
Default ConnectionService	This field displays the complete hierarchical name for the default WAN interface.
ForwardNumberofEntries	This field displays the number of forwarding entries.

13.8.1 Forwarding Table

The **Forwarding** screen displays the list of forwarding tables on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Click **InternetGatewayDevice** > **Layer3Forwarding** > **Forwarding.**

Figure 75 TR-069: Layer3 Forwarding Table



13.8.2 Forwarding Table Details

Use the detailed **Forwarding** screen to configure the layer 3 forwarding table on the device.

Select a registered device in the Device List window and click **Provision** > **InternetGatewayDevice** > **Layer3Forwarding** > **Forwarding.** Then click on an index number.

Figure 76 TR-069: Layer3 Forwarding Table: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 34 TR-069: Layer3 Forwarding: Forwarding

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that entry in the forwarding table is enabled. A value of **0** means that the rule is disabled. This is the default setting for new forwarding entries.
Status	This field displays the status of the forwarding entry.
Type	This field displays the route type. **Default** sets the device to route packets with any destination. **Host** sets the device to route packets to a specific destination IP address. **Network** sets the device to route packets to an IP network.
DestIPAddress	This field displays the destination IP address in dotted decimal notation for the route entry.
DestSubnetMask	This field displays the destination subnet mask in dotted decimal notation for the route entry.
SourceIPAddress	This field displays the source IP address in dotted decimal notation for the route entry.
SourceSubnetMask	This field displays the source subnet mask in dotted decimal notation for the route entry.
GatewayIPAddress	This field displays the IP address of the gateway in dotted decimal notation for the route entry.
Interface	This field displays the hierarchical name of the WAN interface associated to this route entry. For example, “InternetGatewayDevice.WANDevice.1.-WANConnectionDevice.1.WANPPPConnection.1”
ForwardingMetric	This field displays the number of hops to the destination. This is associated to the cost of the route. **-1** means this route is not used to forward traffic.
MTU	This field displays the maximum Ethernet packet size allowed on this route.

13.9 LAN Configuration Security

Use the **LANConfigSecurity** screen to display and configure the password to allow LAN access on the device for auto-configuration settings. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **InternetGatewayDevice** > **LANConfigSecurity.**

Figure 77 TR-069: LANConfigSecurity

13.10 IP Ping Diagnostics

Use the **IPPingDiagnostics** screen to configure the ping test settings on a device.

Select a registered device in the Device List window and click **Provision** **InternetGatewayDevice** > **IPPingDiagnostics**.

Figure 78 TR-069: IPPingDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 35 TR-069: IPPingDiagnostics

LABEL	DESCRIPTION
DiagnosticsState	This field displays the ping test result.
Interface	This field displays the hierarchical name of the interface for ping diagnostics. For example, “InternetGatewayDevice.WANDevice.1.-WANConnectionDevice.1.WANPPPConnection.1” You can enter up to 256 characters for the interface name.

Table 35 TR-069: IPPingDiagnostics (continued)

LABEL	DESCRIPTION
Host	This field displays the IP address or domain name of the host the device is to ping to test the connection.
NumberOfRepetitions	This field displays the number of ping test before displaying the result.
Timeout	This field displays the timeout (in milli-seconds) for a ping test.
DataBlockSize	This field displays the size of the packet to send for each ping test.
DSCP	This field displays the DiffServ Code Point (DSCP) to use for the test packets. The default is 0.
SuccessCount	This field displays the number of ping tests that are successful before the timeout.
FailureCount	This field displays the number of ping tests that failed.
AverageResponseTime	This field displays the average response time (in milli-seconds) of successful ping tests. If there is no successful responses, this field displays 0.
MinimumResponseTime	This field displays the minimum response time (in milli-seconds) of successful ping tests. If there is no successful responses, this field displays 0.
MaximumResponse Time	This field displays the maximum response time (in milli-seconds) of successful ping tests. If there is no successful responses, this field displays 0.

14

LAN Device

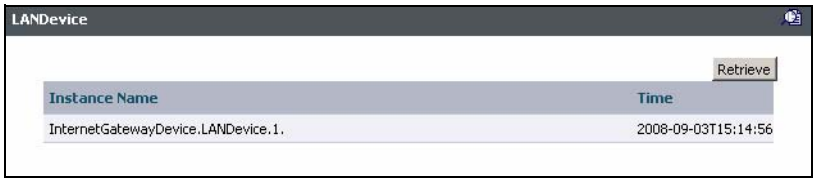
This chapter describes the screens you use to configure and view LAN settings.

14.1 LAN Device Screen

Use the **LANDevice** screens to configure or view the LAN interface settings on the selected device. The number of screens and field labels available vary depending on your device model. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **InternetGatewayDevice** > **LANDevice** to display the screen.

Figure 79 TR-069: LANDevice



14.1.1 Detailed LAN Device Information

Use this screen to view detailed LAN device information. Click **Provision** > **InternetGatewayDevice** > **LANDevice** and a number.

Figure 80 TR-069: LANDevice: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 36 TR-069: LANDevice: Details

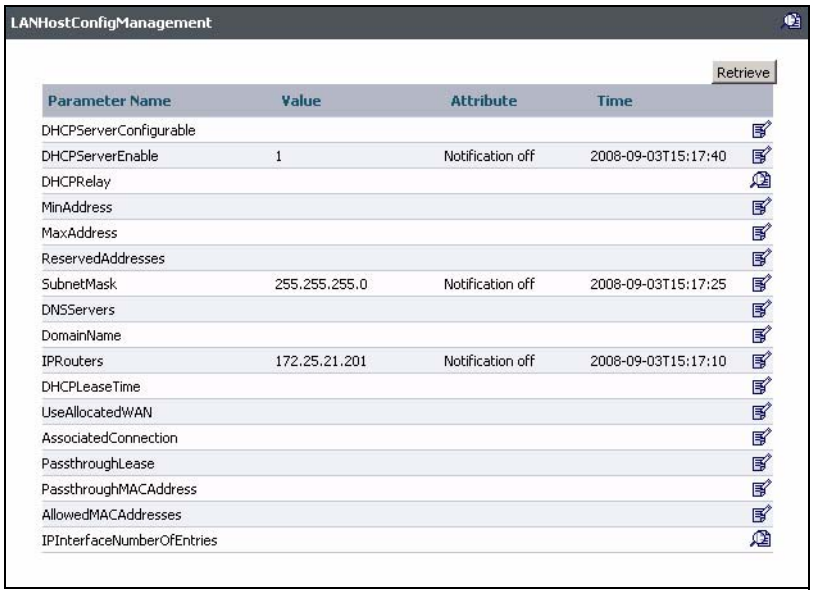
PARAMETER NAME	VALUE
LANEthernetInterfaceNumberOfEntries	This field displays the number of instances on the LAN interface.
LANUSBInterfaceNumberOfEntries	This field displays the number of instances on the USB interface.
LANWLANConfigurationNumberOfEntries	This field displays the number of instances on the WLAN interface.

14.2 LAN Host Configuration Management

Use the **LANHostConfigManagement** screen to view and configure DHCP settings on the LAN interface.

Select a registered device in the Device List window and click **Provision** > **InternetGatewayDevice** > **LANDevice**. Click a number and **LANHostConfigManagement** to display the screen.

Figure 81 TR-069: LAN Device: LANHostConfigManagement



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 37 TR-069: LAN Device: LANHostConfigManagement

PARAMETER NAME	VALUE
DHCPServerConfigurable	This field displays **1** if Vantage Access can change the default DHCP server setting on the LAN interface. This field displays **0** to have the device use the default DHCP server settings on the LAN. No changes are allowed.
DHCPServerEnable	This field displays **1** to indicate that the DHCP server setting on the LAN interface is enabled. This field displays **0** to indicate that the DHCP server setting on the LAN interface is disabled.
DHCPRelay	This field displays **1** when the device is set to act as a DHCP relay on the LAN. The device will forward DHCP requests from the clients to the actual DHCP server on the LAN. In this case, you must set up a DHCP server. This field displays **0** when DHCP relay is deactivated. In this case, the device acts as a DHCP server.
MinAddress	This field displays the first IP address in the DHCP IP pool the DHCP server assigns to a DHCP client on the LAN.
MaxAddress	This field displays the last IP address in the DHCP IP pool the DHCP server assigns to a DHCP client on the LAN.
ReservedAddresses	This field displays the IP address(es) in the DHCP IP pool that is reserved and not assigned to a DHCP client on the LAN. IP addresses are separated by a comma (,).
SubnetMask	This field displays the subnet mask for the DHCP clients.
DNSServers	This field displays the IP address of the DNS server whose information the device sends to the DHCP clients. DNS server IP addresses are separated by a comma (,).
DomainName	This field displays the domain name the device is to assign to DHCP clients.
IPRouters	This field displays the IP address of the default gateway on the LAN. IP addresses are separated by a comma (,).
DHCPLeaseTime	This field displays the lease time (in seconds) for the assigned IP address to DHCP client(s). This field displays **-1** to indicate that a lease time never times out.
UseAllocatedWAN	This field displays how the device is to assign DHCP client IP address(es). **Normal** means the device is set to assign IP addresses from the DHCP IP pool configured. **UseAllocatedSubnet** means the device is set to assign IP addresses from the range of WAN IP addresses provided by your ISP. **Passthrough** means the device is set to assign IP addresses to DHCP clients whose MAC address is marked for passthrough.
AssociatedConnection	This field is applicable if the **UseAllocatedWAN** field displays **UseAllocatedSubnet** or **Passthrough**. This field displays the complete hierarchical name for the default WAN interface to which this connection is associated.
PassthroughLease	This field displays the lease time (in seconds) to DHCP clients when the WAN IP address is passthrough.
PassthroughMACAddress	This field is applicable if you select **Passthrough** in the **UseAllocatedWAN** field.

Table 37 TR-069: LAN Device: LANHostConfigManagement (continued)

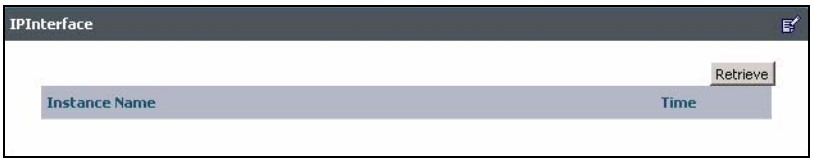
PARAMETER NAME	VALUE
AllowedMACAddresses	This field displays the MAC address(es) allowed to pass through the LAN.
IPInterfaceNumberOfEntries	This field displays the number of IP subnets on the LAN. This field is **1** if IP alias is not supported on the LAN.

14.2.1 IP Interface

The **IPInterface** screen allows you to view IP settings per each subnet on the LAN. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**. Click a number and **LANHostConfigManagement**. Click **IPInterface** to display the screen.

Figure 82 TR-069: LAN Device: IPInterface

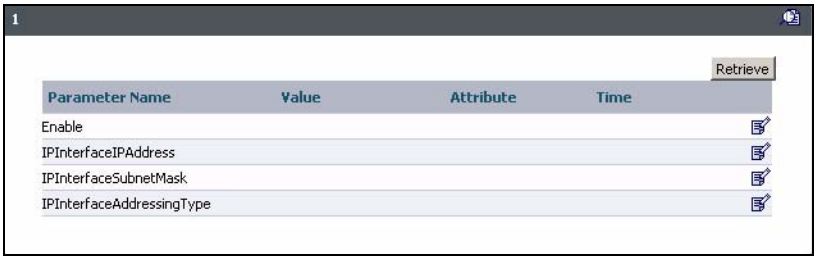


14.2.2 IP Interface Details

Use this screen to view detailed IP interface information.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANHostConfigManagement**.
3. Click **IPInterface** and a number to display the screen.

Figure 83 TR-069: LAN Device: IPInterface: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 38 TR-069: LAN Device: IPInterface: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the LAN interface is enabled. **0** means the LAN interface is disabled and no traffic is allowed through.
IPInterfaceIPAddress	This field displays the LAN IP address of the device in dotted decimal notation, for example, 192.168.1.1.

Table 38 TR-069: LAN Device: IPInterface: Details (continued)

PARAMETER NAME	VALUE
IPInterfaceSubnetMask	This field displays the subnet mask on the LAN. For example, 255.255.255.0.
IPInterfaceAddressingType	This field displays the method to assign IP address on the LAN interface. **DHCP** means the device is set to assign IP addresses from a DHCP server. **Static** means the device is set to use a fixed IP address configured in the field above. **AutoIP** means the device is set to use the default IP settings on the LAN interface.

14.3 LAN Ethernet Interface

The **LANEthernetInterfaceConfig** screen allows you to view LAN Ethernet settings. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**. Then click a number and **LANEthernetInterfaceConfig** to display the screen.

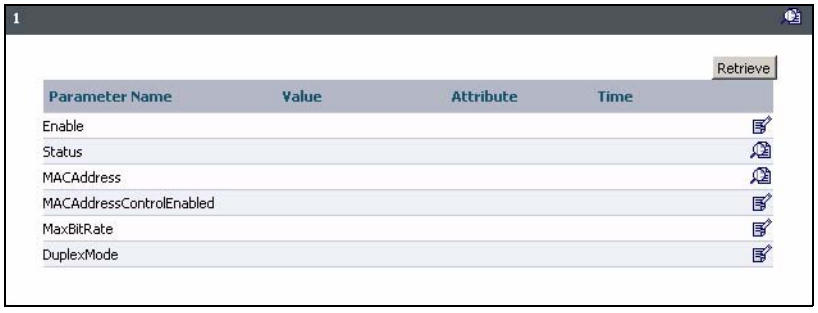
Figure 84 TR-069: LAN Device: LANEthernetInterfaceConfig

14.3.1 LAN Ethernet Interface Details

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANEthernetInterfaceConfig**.
3. Click a number to display the configuration screen for a LAN Ethernet interface.

Use this screen to enable or disable the LAN Ethernet interface, configure the port speed and duplex mode. You can also use this screen to enable or disable static MAC address learning.

Figure 85 TR-069: LAN Device: LANEthernetInterfaceConfig: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 39 TR-069: LAN Device: LANEthernetInterfaceConfig: Details

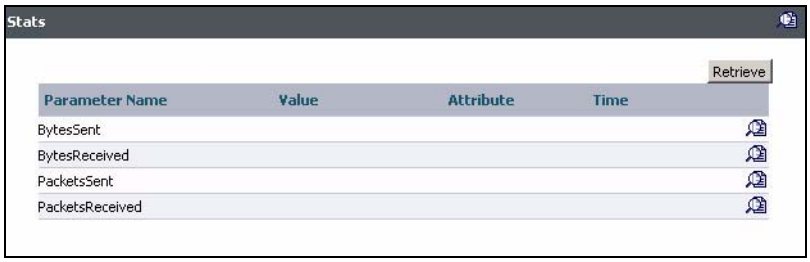
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the LAN Ethernet interface is active. **0** indicates the LAN Ethernet interface is disabled. In this case, no connection is allowed.
Status	This field displays the connection status of the Ethernet interface.
MACAddress	This field displays the MAC address of the Ethernet interface.
MACAddress ControlEnabled	This field displays **1** to indicate that traffic with the specified MAC addresses is allowed on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 14.2 on page 154). This field displays **0** to indicate that MAC address control is disabled. All traffic is allowed through the LAN interface.
MaxBitRate	This field displays the connection speed in megabits per second (Mbps). **Auto** (auto-negotiation) allows the port to negotiate with a peer port automatically to obtain the connection speed that both ends support.
DuplexMode	This field displays the duplex mode for the connection. **Auto** allows the port to negotiate with a peer port automatically to obtain the duplex mode that both ends support.

14.3.2 Ethernet Interface Stats

The **Stats** screen shows the statistics on the LAN interface.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > LANDevice**.
2. Click a number and **LANEthernetInterfaceConfig**.
3. Click a number and **Stats**.

Figure 86 TR-069: LAN Device: LANEthernetInterfaceConfig: Stats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 40 TR-069: LAN Device: LANEthernetInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the number of transmitted bytes on this interface.
BytesReceived	This field displays the number of received bytes on this interface.

Table 40 TR-069: LAN Device: LANEthernetInterfaceConfig: Stats (continued)

PARAMETER NAME	VALUE
PacketsSent	This field displays the number of transmitted packets on this interface.
PacketsReceived	This field displays the number of received packets on this interface.

14.4 LAN USB Interface

The **LANUSBInterfaceConfig** screen is applicable when your device comes with a USB port. Use this screen to view a summary of the USB interface. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**. Then click a number and **LANUSBInterfaceConfig** to display the screen.

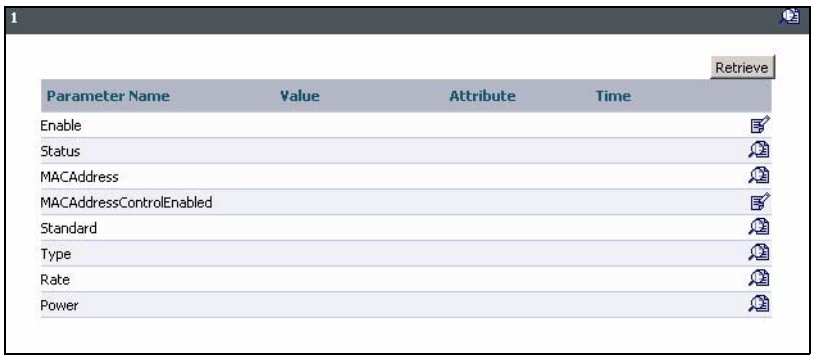
Figure 87 TR-069: LAN Device: LANUSBInterfaceConfig

14.4.1 LAN USB Interface Details

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANUSBInterfaceConfig**.
3. Click a number to display the screen as shown.

Use this screen to activate the USB interface and/or enable MAC address learning control.

Figure 88 TR-069: LAN Device: LANUSBInterfaceConfig: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 41 TR-069: LAN Device: LANUSBInterfaceConfig: Details

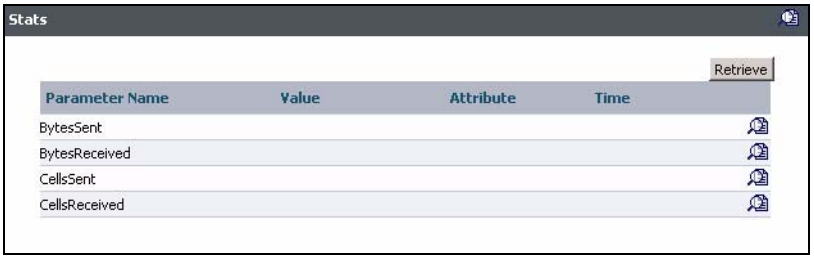
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the USB interface on the LAN is enabled; otherwise, it displays **0**.
Status	This field displays the connection status of the USB interface on the LAN.
MACAddress	This field displays the MAC address of the USB interface on the LAN.
MACAddress ControlEnabled	This field displays **1** to allow traffic with the specified MAC addresses on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 14.2 on page 154). This field displays **0** to indicate that MAC address control is disabled on this port. All traffic is allowed through the USB interface on the LAN.
Standard	This field displays version of the USB standard supported on the device.
Type	This field displays the type of USB interface on the device.
Rate	This field displays the speed of the USB interface.
Power	This field displays how the USB interface is to obtain power.

14.4.2 USB Interface Stats

Display the **Stats** screen to view the statistics of the USB interface on the LAN.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice** > **LANUSBInterfaceConfig**, click a number and **Stats** to display the screen as shown.

Figure 89 TR-069: LAN Device: LANUSBInterfaceConfig: Stats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 42 TR-069: LAN Device: LANUSBInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the number of transmitted bytes on this interface.
BytesReceived	This field displays the number of received bytes on this interface.
CellsSent	This field displays the number of transmitted cells on this interface.
CellsReceived	This field displays the number of received cells on this interface.

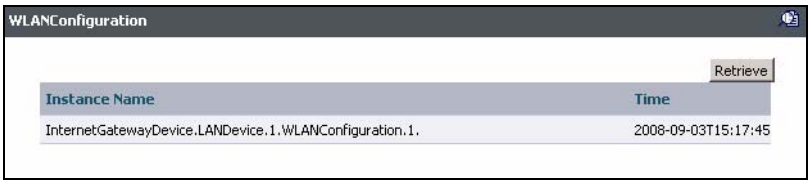
14.5 WLAN Configuration

The settings in the **WLANConfiguration** screen is applicable to a device with built-in wireless capabilities.

Use the **WLANConfiguration** screen to view the number of wireless LAN interface on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**. Click a number and **WLANConfiguration** to display the screen as shown.

Figure 90 TR-069: LAN Device: WLANConfiguration

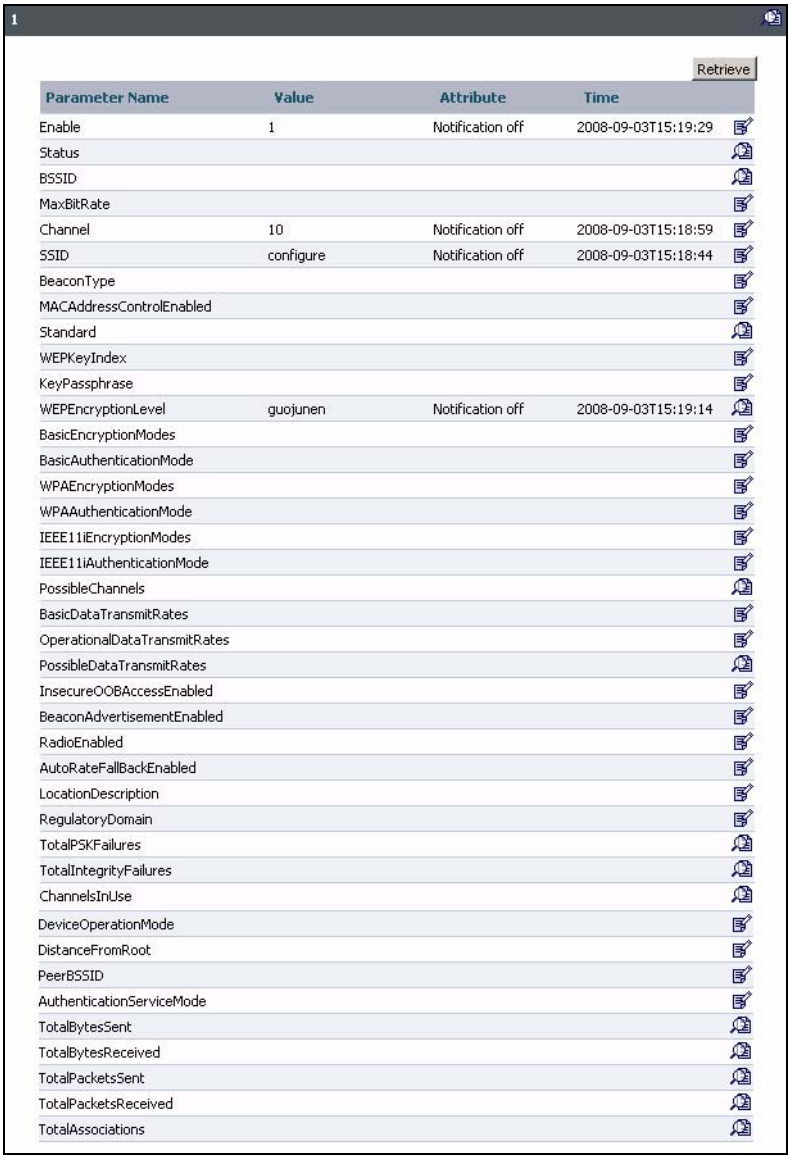


14.5.1 WLAN Configuration Details

The settings in the **WLANConfiguration** screen is applicable to a device with built-in wireless capabilities. Use this configuration screen to view and configure basic wireless LAN settings on the device.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number to display the screen as shown.

Figure 91 TR-069: LAN Device: WLANConfiguration: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 43 TR-069: LAN Device: WLANConfiguration

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the WLAN interface is enabled; otherwise, it displays **0**.
Status	This field displays the connection status of the WLAN interface.
BSSID	This field displays identification (usually the MAC address) of the wireless interface.
MaxBitRate	This field displays the maximum bit rate (in Mbps) allowed on the WLAN interface. “auto” means the device automatically uses the highest transmission rate in the **OperationalDataTransmitRates** field.

Table 43 TR-069: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
Channel	This field displays the wireless channel number (0 to 255) to use for transmission.
SSID	This field displays the name (up to 32 characters) to identify the wireless network.
BeaconType	This field displays the WLAN security mode for wireless transmission. Select **None** to disable wireless security.
MACAddressControlEnabled	This field displays **1** to indicate that traffic with the specified MAC addresses is allowed on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 14.2 on page 154). **0** means the MAC address control feature is disabled. All traffic is allowed through the USB interface on the LAN.
Standard	This field displays the wireless standard in which the device is currently operating.
WEPKeyIndex	This field displays the index number (1 - 4) of the WEP key the device is to use for data encryption.
KeyPassphrase	This field displays the passphrase the device uses to generate the WEP keys.
WEPEncryptionLevel	This field displays the wireless encryption level supported on the device.
BasicEncryptionModes	This field is applicable when you select a basic security option for the **BeaconType** field. **WEPEncryption** means the device is set to use basic WEP encryption for wireless transmission. **None** means WEP encryption is disabled. In this case, traffic sent through the wireless network is not secure.
BasicAuthenticationMode	This field is applicable when you select a basic security option in the **BeaconType** field. **EAPAuthentication** enables user authentication before wireless connection is allowed for the WLAN clients. **None** deactivates this feature. In this case, your wireless network may be accessible by anyone.
WPAEncryptionModes	This field is applicable when you select a WPA security option in the **BeaconType** field. This field displays the encryption method used to secure traffic over the wireless network.
WPAAuthenticationMode	This field is applicable when you select a WPA security option in the **BeaconType** field. This field displays the authentication method used to control access to your wireless network.
IEEE11iEncryptionModes	This field is applicable when you select an 11i security option in the **BeaconType** field. This field displays the encryption method to secure traffic over the wireless network.
IEEE11iAuthenticationMode	This field is applicable when you select an 11i security option in the **BeaconType** field. This field displays the authentication method used to control access to your wireless network.
PossibleChannels	This field displays wireless channels available for your device as defined by the regulatory body.

Table 43 TR-069: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
BasicDataTransmitRates	This field displays the wireless transmission rate (Mbps) for broadcast, multicast and unicast frames on the device. Multiple transmission rates are separated by commas (,). For example, “1,2” means the device is able to send at 1 Mbps or 2 Mbps.
OperationalDataTransmitRates	This field displays the maximum transmission rate (in Mbps) allowed for unicast frames on the device. Multiple transmission rates are separated by commas (,). For example, if the **BasicDataTransmitRates** field is “1,2” and this field is “1,2,5.5,11”, then the device can transmit unicast frames at the maximum rates of 5.5 Mbps or 11 Mbps.
PossibleDataTransmitRates	This field displays the transmission rates for unicast frames WLAN clients are allowed when connecting to the device. For example, if this field displays “1,2,5.5”. This means that the device allows a wireless connection of up to 5.5 Mbps even though it is capable of connecting at 11 Mbps.
InsecureOOBAccessEnabled	This field displays **1** to indicate that configuration changes are to be sent through insecure management methods other than the WAN CPE Management Protocol. **0** disables this feature.
BeaconAdvertisementEnabled	This field displays **1** to indicate that the device is set to send beacons to advertise its presence; otherwise, this field is **0**.
RadioEnabled	This field display **1** to indicate that the wireless transmission is allowed on the device; otherwise, this field displays **0**.
AutoRateFallBackEnabled	This field displays **1** to indicate that the device is set to automatically reduce wireless transmission rate due to noise or contention. **0** deactivates this feature.
LocationDescription	This field displays the location of the device for identification purposes.
RegulatoryDomain	This field displays the name of the regulatory body in your geographical area. The first two characters are the country code as defined in ISO/IEC 3166-1. For the third character, “ “ means all environment, “I” means inside and “O” means outside.
TotalPSKFailures	This field is applicable for WPA and 802.11i authentication methods. This field displays the number of times pre-shared key authentication has failed.
TotalIntegrityFailures	This field is applicable for WPA and 802.11i authentication methods. This field displays the number of times MICHEAL integrity check has failed.
ChannelsInUse	This field displays the channel number(s) that is currently used on the device for wireless transmission.
DeviceOperationMode	This field displays the wireless operation mode for the device.
DistanceFromRoot	This field displays the number of hops between this device and the wireless bridge/repeater.
PeerBSSID	This field displays the MAC address of the peer wireless bridge/repeater.
AuthenticationServiceMode	If user authentication is enabled, this field displays the location of the user database the device is to check.
TotalBytesSent	This field displays the number of transmitted bytes on this interface.
TotalBytesReceived	This field displays the number of received bytes on this interface.
TotalPacketsSent	This field displays the number of transmitted packets on this interface.

Table 43 TR-069: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
TotalPacketsReceived	This field displays the number of received packets on this interface.
TotalAssociations	This field displays the number of wireless clients associated to this device.

14.6 WLAN Association List

The **AssociatedDevice** screen displays a list of WLAN devices that are currently connected to the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **AssociatedDevice** to display the screen as shown.

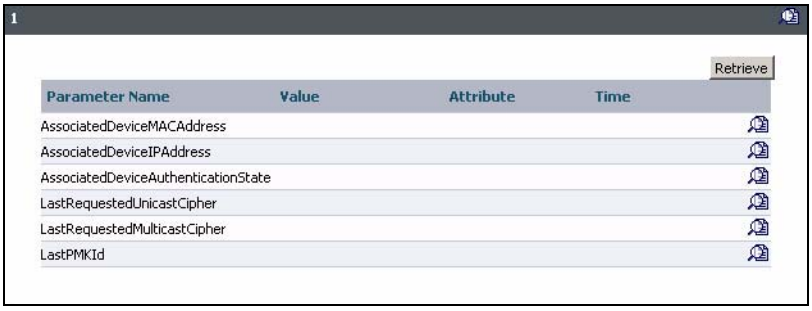
Figure 92 TR-069: LAN Device: WLANConfiguration: AssociatedDevice

14.6.1 WLAN Association List Details

Display the **AssociatedDevice** screen to view information on a wireless client currently connected to the device.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **AssociatedDevice**.
4. Click a number to display the screen as shown.

Figure 93 TR-069: LAN Device: WLANConfiguration: AssociatedDevice: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 44 TR-069: LAN Device: WLANConfiguration: AssociatedDevice

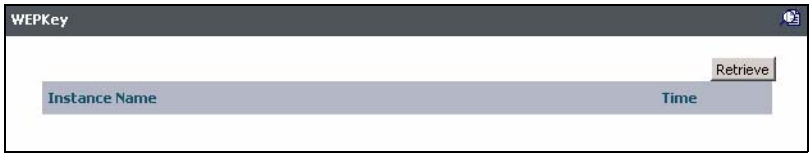
LABEL	DESCRIPTION
AssociatedDeviceMACAddress	This field displays the MAC address of an associated device.
AssociatedDeviceIPAddress	This field displays the IP address or domain name of an associated device.
AssociatedDeviceAuthenticationState	This field displays whether the associated device is authenticated (**Enable**) or not (**Disable**).
LastRequestedUnicastCipher	This field is applicable for 802.11i authentication methods. This field displays the last unicast cipher used for a device with the specified MAC address.
LastRequestedMulticastCipher	This field is applicable for 802.11i authentication methods. This field displays the last multicast cipher used for a device with the specified MAC address.
LastPMKId	This field is applicable for 802.11i authentication methods. This field displays the last pairwise master key used for a device with the specified MAC address.

14.7 WEP Key

Use the **WEPKey** screen to view the WEP key object information. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **WEPKey** to display the screen as shown.

Figure 94 TR-069: LAN Device: WLANConfiguration: WEPKey



14.7.1 WEP Key Details

Use this configuration screen to view and set up WEP encryption keys for secure wireless communication on the device.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **WEPKey**.
4. Click a number to display the screen as shown.

Figure 95 TR-069: LAN Device: WLANConfiguration: WEPKey: Details

The **WEPKey** field displays the WEP key content. Depending on the encryption level in the **WEPEncryptionLevel** field in the **WLANConfiguration** screen, the key length varies.

For 40-bit encryption level, this field displays 10 hexadecimal characters (“0-9”, “a-z”, “A-F”). For 104-bit encryption level, this field displays 26 hexadecimal characters (“0-9”, “a-z”, “A-F”). The WEP key content is not sent when requested. An empty string is returned.

Refer to Section 11.2.4 on page 132 for other field descriptions.

14.8 Pre-shared Key

Use the **PreSharedKey** screen to view the pre-shared key information. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **PreSharedKey** to display the screen as shown.

Figure 96 TR-069: LAN Device: WLANConfiguration: PreSharedKey

14.8.1 Pre-shared Key Details

Use the detailed **PreSharedKey** screen to configure the passphrase the device uses to generate the pre-shared key and/or WEP keys automatically.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **PreSharedKey**.
4. Click a number to display the screen as shown.

Figure 97 TR-069: LAN Device: WLANConfiguration: PreSharedKey: Details

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 45 TR-069: LAN Device: WLANConfiguration: PreSharedKey: Details

PARAMETER NAME	VALUE
PreSharedKey	This field displays a pre-shared key for WPA security.
KeyPassphrase	This field displays the passphrase the device uses to generate a pre-shared key or WEP key based.
AssociatedDeviceMACAddress	This field displays the MAC address of a wireless client associated to this key.

14.9 LAN Hosts

In the **Hosts** screen, you can view the number of LAN hosts that are assigned a dynamic or static IP address by the device. Refer to Section 11.2.4 on page 132 for other field descriptions

Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**. Click a number and **Hosts** to display the screen.

Figure 98 TR-069: LAN Device: Hosts

14.9.1 LAN Host Table

Display the **Host** screen to view the host table name. Refer to Section 11.2.4 on page 132 for other field descriptions

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **Hosts**.
3. Click **Host** to display the screen.

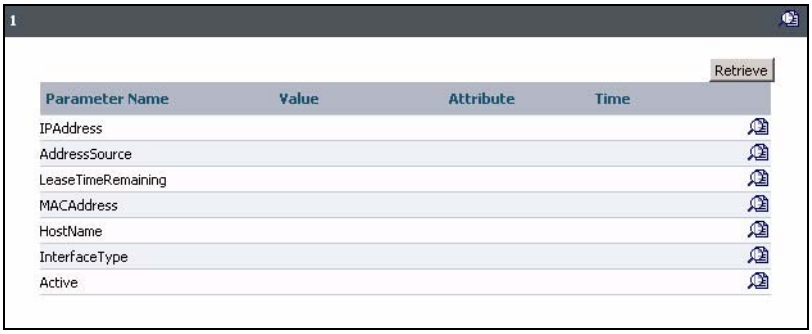
Figure 99 TR-069: LAN Device: Hosts: Host

14.9.2 LAN Host Table Details

Display the detailed Host screen to view or configure DHCP host settings (such as IP address, lease time, etc.).

1. Select a registered device in the Device List window and click **InternetGatewayDevice > LANDevice**.
2. Click a number and **Hosts**.
3. Click **Host** and a number to display the screen.

Figure 100 TR-069: LAN Device: Hosts: Host: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 46 TR-069: LAN Device: Hosts: Host: Details

PARAMETER NAME	VALUE
IPAddress	This field displays the IP address assigned to the LAN host.
AddressSource	This field indicates whether the LAN host obtains the IP address statically (**Static**), dynamically from the device (**DHCP**) or through automatic assignment (**Auto**).
LeaseTimeRemaining	If the host IP address is assigned through DHCP, this field displays the lease time remaining (in seconds). A value of -1 means that the lease never times out. This field displays zero if the IP address assignment is not through DHCP.
MACAddress	This field displays the MAC address of the LAN host.
HostName	This field displays the name of the LAN host.
InterfaceType	This field displays the name of the interface the LAN host uses to connect to the device.
Active	This field is **Enabled** to indicate that the LAN host is currently present in the network. Otherwise, this field shows **Disable**.

15

WAN Device

This chapter describes the screens you use to configure and view WAN settings.

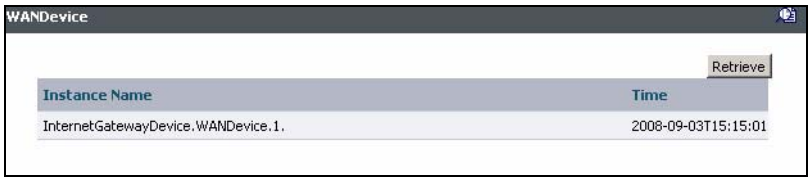
15.1 WAN Device Screen Overview

Use the WAN Device screens to configure or view the WAN interface settings on the selected device. The number of screens and field labels available vary depending on your device model.

The **WANDevice** screen displays the number of connected WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions

Select a registered device in the Device List window and click **InternetGatewayDevice > WANDevice.**

Figure 101 TR-069: WANDevice



15.1.1 WAN Device Details

To view the number of WAN connections, select a registered device in the Device List window and click **InternetGatewayDevice > WANDevice** and then click an index.

The value for the **WANConnectionNumberOfEntries** displays the number of connections on the WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions

Figure 102 TR-069: WANDevice: Details

15.2 WAN Common Interface Configuration

You can view basic common connection status in the **WANCommonInterfaceConfig** screen.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**. Click a number and **WANCommonInterfaceConfig to display the screen.**

Figure 103 TR-069: WAN Device: WANCommonInterfaceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 47 TR-069: WAN Device: WANCommonInterfaceConfig

PARAMETER NAME	VALUE
EnabledForInternet	This field displays **1** to indicate that the WAN interface is enabled for Internet access; otherwise, the field displays **0**.
WANAccessType	This field displays the type of connection for Internet access on the WAN interface.
Layer1UpstreamMaxBitRate	This field displays the maximum upstream transmission rate in bits per second.
Layer1DownstreamMaxBitRate	This field displays the maximum download transmission rate in bits per second.
PhysicalLinkStatus	This field displays the link status. Possible states are **Up**, **Down**, **Initializing** and **Unavailable**.
WANAccessProvider	This field displays the name of the ISP providing the Internet access service.
TotalBytesSent	This field displays the total number of bytes transmitted.
TotalBytesReceived	This field displays the total number of bytes received.
TotalPacketsSent	This field displays the total number of packets transmitted.
TotalPacketsReceived	This field displays the total number of packets received.
MaximumActiveConnections	This field displays the maximum number of connections allowed on the device for Internet access.
NumberOfActiveConnections	This field displays the number of active connections on the device for Internet access.

15.2.1 Connection

Use the **Connection** screen to view the Internet connection instance. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANCommonInterfaceConfig**.
3. Click **Connection** to display the screen.

Figure 104 TR-069: WAN Device: WANCommonInterfaceConfig: Connection

15.2.2 Connection Setup

Use the **Connection** screen to configure general connection settings.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANCommonInterfaceConfig**.
3. Click **Connection** and a number to display the screen.

Figure 105 TR-069: WAN Device: WANCommonInterfaceConfig: Connection: Setup

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 48 TR-069: WAN Device: WANCommonInterfaceConfig: Connection: Setup

PARAMETER NAME	VALUE
ActiveConnectionDeviceContainer	This field displays the hierarchical name of the WAN interface associated with the connection. For example, “InternetGatewayDevice.WANDevice.1.-WANConnectionDevice.1.WANPPPConnection.1”
ActiveConnectionServiceID	This field displays the hierarchical name of the interface object for this connection.

15.3 WAN DSL Interface Configuration

Use the **WANDSLInterfaceConfig** to configure the DSL connection for Internet access. DSL connection setup is independent of other WAN interface parameter settings.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**. Click a number and **WANDSLInterfaceConfig to display the screen.**

Figure 106 TR-069: WAN Device: WANDSLInterfaceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 49 TR-069: WAN Device: WANDSLInterfaceConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the link is active; otherwise, it displays **0**.
Status	This field displays the link status.
ModulationType	This field displays the modulation method used on the link.
LineEncoding	This field displays the line encoding method used to establish a connection to the ISP.
DataPath	This field displays whether the link uses fast (lower latency) or interleave (lower error rate) data path.
InterleaveDepth	This field is applicable when the **DataPath** field shows **Interleave**. This field displays the interleaved depth.
LineNumber	This field displays the number of the line pair used for the connection. For example, 1 means the inner most pair.

Table 49 TR-069: WAN Device: WANDSLInterfaceConfig (continued)

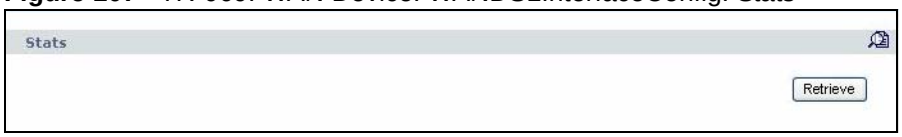
PARAMETER NAME	VALUE
UpstreamCurrRate	This field displays the current payload bandwidth (in kbps) of the upstream DSL channel.
DownstreamCurrRate	This field displays the current payload bandwidth (in kbps) of the downstream DSL channel.
UpstreamMaxRate	This field displays the attainable bandwidth (in kbps) for the upstream DSL channel.
DownstreamMaxRate	This field displays the attainable bandwidth (in kbps) for the downstream DSL channel.
UpstreamNoiseMargin	This field displays the current upstream Noise-to-Signal ratio (in 0.1 dB) for the upstream DSL channel.
DownstreamNoiseMargin	This field displays the current upstream Noise-to-Signal ratio (in 0.1 dB) for the downstream DSL channel.
UpstreamAttenuation	This field displays the current upstream signal loss (in 0.1 dB).
DownstreamAttenuation	This field displays the current downstream signal loss (in 0.1 dB).
UpstreamPower	This field displays the output power (in 0.1dBmV).
DownstreamPower	This field displays the received power (in 0.1dBmV).
ATURVendor	This field displays the ATU-R vendor identifier.
ATURCountry	This field displays the ATU-R country code.
ATURANSIStd	This field displays the ATU-R T1.413 version number.
ATURANSIRev	This field displays the ATU-R vendor revision number.
ATUCVendor	This field displays the ATU-C vendor identifier.
ATUCCountry	This field displays the ATU-C country code.
ATUCANSIStd	This field displays the ATU-C T1.413 version number.
ATUCANSIRev	This field displays the ATU-C vendor revision number.
TotalStart	This field displays the number of seconds that elapsed since the start of the statistics information collection.
ShowtimeStart	This field displays the number of seconds since the beginning of the period used for collecting first ShowTime statistics.
LastShowtimeStart	This field displays the number of seconds since the beginning of the second most recent period used for collecting the ShowTime statistics.
CurrentDayStart	This field displays the number of seconds since the beginning of the period used for collecting CurrentDayStart statistics.
QuarterHourStart	This field displays the number of seconds since the beginning of the period used for collecting QuarterHour statistics.

15.3.1 WAN DSL Line Stats

Use the **Stats** screen to view the DSL connection statistics instance. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLInterfaceConfig**.
3. Click **Stats**.

Figure 107 TR-069: WAN Device: WANDSLInterfaceConfig: Stats



15.3.2 WAN DSL Line Statistics Details

You can view the line statistics in the **Stats** screens. The following statistics screens are available. Field labels are the same in all the screens.

- **Total**: This screen displays the statistics with the totals.
- **Showtime**: This screen displays the statistics since the most recent DSL Showtime.
- **LastShowtime**: This screen displays the statistics since the second most recent DSL Showtime.
- **CurrentDay**: This screen displays the statistics accumulated during the current day.
- **QuarterHour**: This screen displays the statistics accumulated during the current 15 minutes.

Follow the steps below to display a statistics screen.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLInterfaceConfig**.
3. Click **Stats** and click on the type of statistics you want to see.

Figure 108 TR-069: WAN Device: WANDSLInterfaceConfig: Stats (Total)

The following table describes the labels in this screen.Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 50 TR-069: WAN Device: WANDSLInterfaceConfig: Stats (Total)

PARAMETER NAME	VALUE
ReceiveBlocks	This field displays the number of blocks received.
TransmitBlocks	This field displays the number of blocks sent.

Table 50 TR-069: WAN Device: WANDSLInterfaceConfig: Stats (Total) (continued)

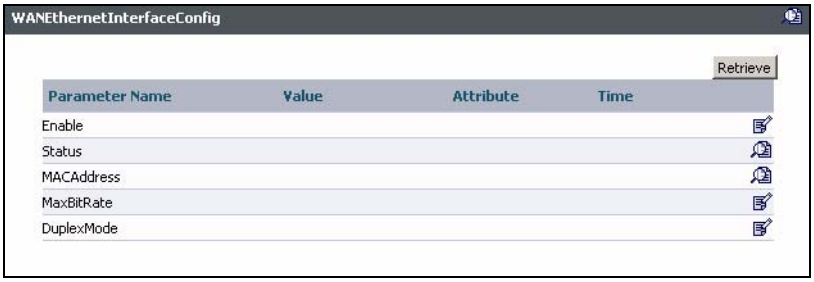
PARAMETER NAME	VALUE
CellDelin	This field displays the number of cell-delineation errors.
LinkRetrain	This field displays the number to link retrain errors.
InitErrors	This field displays the number of initialization errors.
InitTimeouts	This field displays the number of initialization timeout errors.
LossOfFraming	This field displays the number of Loss Of Framing errors.
ErroredSecs	This field displays the number of Errored Seconds.
SeverelyErroredSecs	This field displays the number of Severely Errored Seconds.
FECErrors	This field displays the number of FEC errors.
ATUCFECErrors	This field displays the number of FEC errors detected by the ATU-C.
HECErrors	This field displays the number of HEC errors.
ATUCHECErrors	This field displays the number of HEC errors detected by the ATU-C.
CRCErrors	This field displays the number of CRC errors.
ATUCCRCErrors	This field displays the number of CRC errors detected by the ATU-C.

15.4 WAN Ethernet Interface Configuration

You can set the Ethernet settings on the WAN interface in the **WANEthernetInterfaceConfig** screen.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**. Click a number and **WANEthernetInterfaceConfig to display the screen.**

Figure 109 TR-069: WAN Device: WANEthernetInterfaceConfig



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 51 TR-069: WAN Device: WANEthernetInterfaceConfig

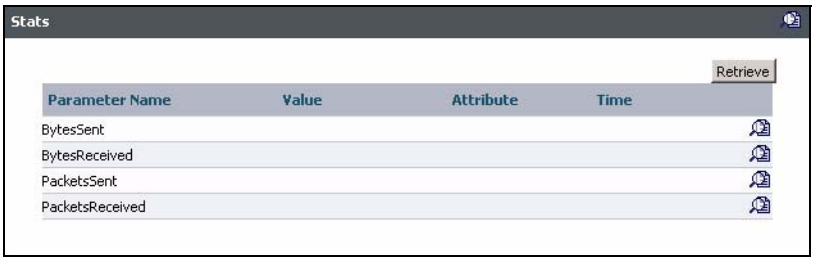
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this interface is active; otherwise, it displays **0**.
Status	This field displays the status of this interface.
MACAddress	This field displays the MAC address of the interface.
MaxBitRate	This field displays the maximum link speed (**10**, **100** or **Auto**) on the interface.
DuplexMode	This field displays the duplex mode (**Half**, **Full** or **Auto**) for the interface.

15.4.1 WAN Ethernet Statistics

View the statistics for the WAN interface in the **Stats** screen.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > WANDevice**.
2. Click a number **WANEthernetInterfaceConfig**.
3. Click **Stats** to display the statistics screen.

Figure 110 TR-069: WAN Device: WANEthernetInterfaceConfig: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 52 TR-069: WAN Device: WANEthernetInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
BytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
PacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
PacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

15.5 WAN DSL Connection Management

The **WANDSLConnectionManagement** screen displays the number of WAN connection services on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **InternetGatewayDevice > WANDevice**. Click a number and **WANDSLConnectionManagement** to display the screen.

Figure 111 TR-069: WAN Device: WANDSLConnectionManagement

15.6 WAN DSL Connection Service Information

You can view a list of connection service instances in the **ConnectionService** screen.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > WANDevice**.
2. Click a number and **WANDSLConnectionManagement**.
3. Click **ConnectionService** to display the screen.

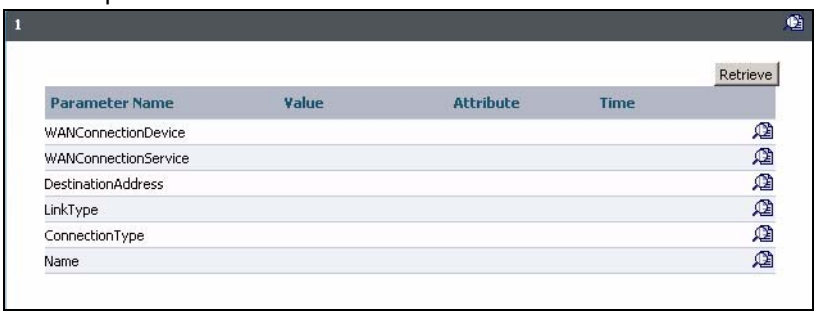
Figure 112 TR-069: WAN Device: WANDSLConnectionManagement: ConnectionService

15.6.1 WAN DSL Connection Service Setup

You can view a list of connection service instances in the **ConnectionService** screen.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > WANDevice**.
2. Click a number and **WANDSLConnectionManagement**.
3. Click **ConnectionService** and a number to display the screen.

Figure 113 TR-069: WAN Device: WANDSLConnectionManagement: ConnectionService: Setup



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 53 TR-069: WAN Device: WANDSLConnectionManagement: ConnectionService: Setup

PARAMETER NAME	VALUE
WANConnectionDevice	This field displays the hierarchical name of the WAN connection device object associated with the connection. For example, “InternetGatewayDevice.WANDevice.1.WANConnectionDevice.2”
WANConnectionService	This field displays the hierarchical name of the WAN connection device object associated with the connection service. For example, “InternetGatewayDevice.WANDevice.1.WANConnectionDevice.2.WANPPPConnection.1”.

Table 53 TR-069: WAN Device: WANDSLConnectionManagement: ConnectionService: Setup (continued)

PARAMETER NAME	VALUE
DestinationAddress	This field shows the destination address of the connection. The address displayed varies depending on the connection type. This field displays VCI/VPI for a PVC connection. This field displays an ATM connection name or ATM address for an SVC connection.
LinkType	This field displays the type of the link.
ConnectionType	This field displays the name of the connection type.
Name	This field displays the descriptive name for this connection.

15.7 WAN DSL Diagnostics

You can view the DSL connection diagnostics data in the **WANDSLDiagnostics** screen.

Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**. Click a number and **WANDSLDiagnostics** to display the screen as shown.

Figure 114 TR-069: WAN Device: WANDSLDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 54 TR-069: WAN Device: WANDSLDiagnostics

PARAMETER NAME	VALUE
LoopDiagnosticsState	This field displays the availability of the link diagnostic test result. **Requested** indicates a test is to be initialized.
ACTPSDds	This field displays the actual power spectral density for the downstream traffic.
ACTPSDus	This field displays the actual power spectral density for the upstream traffic.
ACTATPds	This field displays the actual aggregate transmitter power for the downstream traffic.
ACTATPus	This field displays the actual aggregate transmitter power for the upstream traffic.
HLINSCds	This field displays the linear representation scale for the downstream traffic.
HLINpsds	This field displays the linear channel characteristics per subcarrier for the upstream traffic.

Table 54 TR-069: WAN Device: WANDSLDiagnostics (continued)

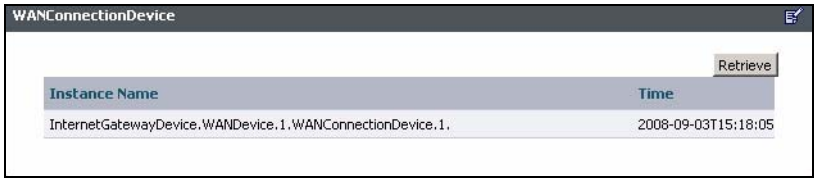
PARAMETER NAME	VALUE
QLNpsds	This field displays the quiet line noise per subcarrier for the downstream traffic in comma-separated list of numbers. Maximum list of numbers is 256 for an ADSL/ADSL2 connection and 512 for an ADSL2+ connection.
SNRpsds	This field displays the Signal-to-Noise ratio per subcarrier for the downstream traffic.
BITSpsds	This field displays the bit allocation per subcarrier for the downstream traffic.
GAINSpsds	This field displays the gain allocation per subcarrier for the downstream traffic.

15.8 WAN Connection Device

For DSL connections, you can view the connection instances associated to an ATM VC in the **WANConnectionDevice** screen.

Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANConnectionDevice** to display the screen as shown.

Figure 115 TR-069: WAN Device: WANConnectionDevice



15.9 WAN Connection Device Details

You can view the number of connection instances associated to WAN connection devices in the detailed **WANConnectionDevice** screen.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click on an index to display the screen as shown.

Figure 116 TR-069: WAN Device: WANConnectionDevice: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 55 TR-069: WAN Device: WANConnectionDevice: Details

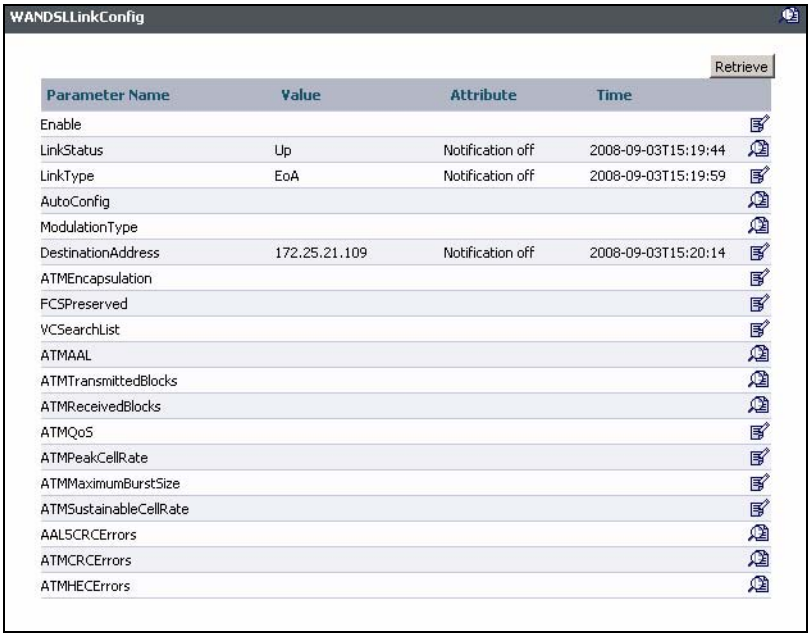
PARAMETER NAME	VALUE
WANIPConnectionNumberOfEntries	This field displays the number of WANIPConnection entries associated to the WANConnectionDevice.
WANPPPConnectionNumberOfEntries	This field displays the number of WANPPPConnection entries associated to the WANConnectionDevice.

15.9.1 WAN DSL Link Configuration

Use the **WANDSLLinkConfig** screen to set the ATM layer properties for the physical DSL connection.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Cick a number and **WANDSLLinkConfig** to display the screen as shown.

Figure 117 TR-069: WAN Device: WANDSLLinkConfig



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 56 TR-069: WAN Device: WANDSLLinkConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the DSL link is active; otherwise, this field displays **0**.
LinkStatus	This field displays the link status (**Up**, **Down**, **Initializing** or **Unavailable**).

Table 56 TR-069: WAN Device: WANDSLLinkConfig (continued)

PARAMETER NAME	VALUE
LinkType	This field displays the type for this DSL link. **EoA** sets the device to use the bridged Ethernet over ATM (RFC2684) link type. **IPoA** sets the device to use the routed IP over ATM (RFC2684) link type. **PPPoA** sets the device to use the PPP over ATM (RFC2364) link type. **PPPoE** sets the device to use the PPP over Ethernet on bridged Ethernet over ATM (RFC2516, RFC2684) link type. **CIP** sets the device to use the Classical IP over ATM (RFC1577) link type. **Unconfigured** means an unknown link type.
AutoConfig	This field displays whether the auto-configuration feature is enabled or disable for this DSL link.
ModulationType	This field displays the type of modulation used on the interface associated to this DSL link.
DestinationAddress	This field displays the destination address for the DSL link. The type of address you entry varies depending on the connection type. This field displays the VCI/VPI for a PVC connection. This field displays an ATM connection name or ATM address for an SVC connection.
ATMEncapsulation	This field displays the encapsulation (**LLC** or **VCMUX**) to use for this DSL link.
FCSPreserved	This field displays **1** to include a checksum in the ATM payload for error correction. **0** means the checksum is not included in the ATM payload. No error correction is available.
VCSearchList	This field displays the VCI/VPI number pairs (separated by a comma) the link uses to establish a connection if the destination address specified cannot be reached.
ATMAAL	This field displays the ATM Adaptation Layer (AAL) the link uses.
ATMTransmittedBlocks	This field displays the number of ATM blocks transmitted successfully.
ATMReceivedBlocks	This field displays the number of ATM blocks received successfully.
ATMQoS	Select the ATM Quality of Service (QoS) method to use on this link.
ATMPeakCellRate	This field displays the peak cell rate (between 0 and 4294967295) for the upstream traffic in cells per second.
ATMMaximumBurstSize	This field displays the maximum burst rate (between 0 and 4294967295) for the upstream traffic in cells.
ATMSustainableCellRate	This field displays the sustainable cell rate (between 0 and 4294967295) for the upstream traffic in cells per second. This value is used for traffic shaping.
AAL5CRCErrors	This field displays the number of AAL5 layer cyclic redundancy check errors.
ATMCRCErrors	This field displays the number of ATM layer cyclic redundancy check errors.
ATMHECErrors	This field displays the number of Header Error Check related errors at the ATM layer.

15.10 WAN ATM F5 Loopback Diagnostics

Use the **WANATMF5LoopbackDiagnostics** screen to view loopback diagnostic (ping) test results and to configure timeout settings for the ping test on the ATM layer.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANATMF5LoopbackDiagnostics** to display the screen as shown.

Figure 118 TR-069: WAN Device: WANATMF5LoopbackDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 57 TR-069: WAN Device: WANATMF5LoopbackDiagnostics

PARAMETER NAME	VALUE
DiagnosticsState	This field displays the availability of the ping test result. **Requested** means a test is to be initiated.
NumberOfRepetitions	This field displays the number of ping tests (between 1 and 4294967295) to perform before displaying the test results.
Timeout	This field displays the timeout (between 1 and 4294967295 milliseconds) for the ping test.
SuccessCount	This field displays the number of pings that received a successful response within the timeout in the most recent ping test.
FailureCount	This field displays the number of pings that failed to receive a successful response within the timeout in the most recent ping test.
AverageResponseTime	This field displays the average response time (in milliseconds) of all pings that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.
MinimumResponseTime	This field displays the minimum response time (in milliseconds) of the ping that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.
MaximumResponseTime	This field displays the maximum response time (in milliseconds) of the ping that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.

15.11 WAN Ethernet Link Configuration

The **WANEthernetLinkConfig** screen displays the Ethernet link status (**Up**, **Down** or **Unavailable**) in the **EthernetLinkStatus** field. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANEthernetLinkConfig** to display the screen as shown.

Figure 119 TR-069: WAN Device: WANEthernetLinkConfig

15.12 WAN POTS Link Configuration

You can view the WAN POTS connection status in the **WANPOTSLinkConfig** screen. The POST connection is used for dialing to the ISP for Internet access.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPOTSLinkConfig** to display the screen as shown.

Figure 120 TR-069: WAN Device: WANPOTSLinkConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 58 TR-069: WAN Device: WANPOTSLinkConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the POTS link is active; otherwise it displays **0**.
LinkStatus	This field displays the link status (**Up**, **Down**, **Dialing**, **Connecting** or **Unavailable**).
ISPPhoneNumber	This field displays the phone number (up to 64 digits in countrycode-areacode-phone number format) to dial to connect to the ISP. For example, +86-10-62618501. Multiple phone numbers are separated with a semicolon (:).
ISPInfo	This field displays a descriptive name (up to 64 characters) to identify this ISP.
LinkType	The default link type is **PPP_Dialup**.
NumberOfRetries	This field displays the number of times (between 0 and 4294967295) the CPE device is to re-dial for Internet connection.
DelayBetweenRetries	This field displays the time (in milliseconds) the CPE device is to wait before attempting to connect to the ISP again.
Fclass	This field indicates the transmission functions the CPE device is capable of. 0:data 1, 2, 2.0: fax 8: voice 80: DSVD
DataModulationSupported	This field displays the modulation method(s) supported for data transfer.
DataProtocol	This field displays the protocol(s) supported for data transfer.
DataCompression	This field displays the compression method used for data transfer.
PlusVTRCommandSupported	This field indicates whether full-duplex mode is activated on the link or not.

15.13 WAN IP Connection

You can view the IP settings for the WAN connection in the **WANIPConnection** screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection** to display the screen as shown.

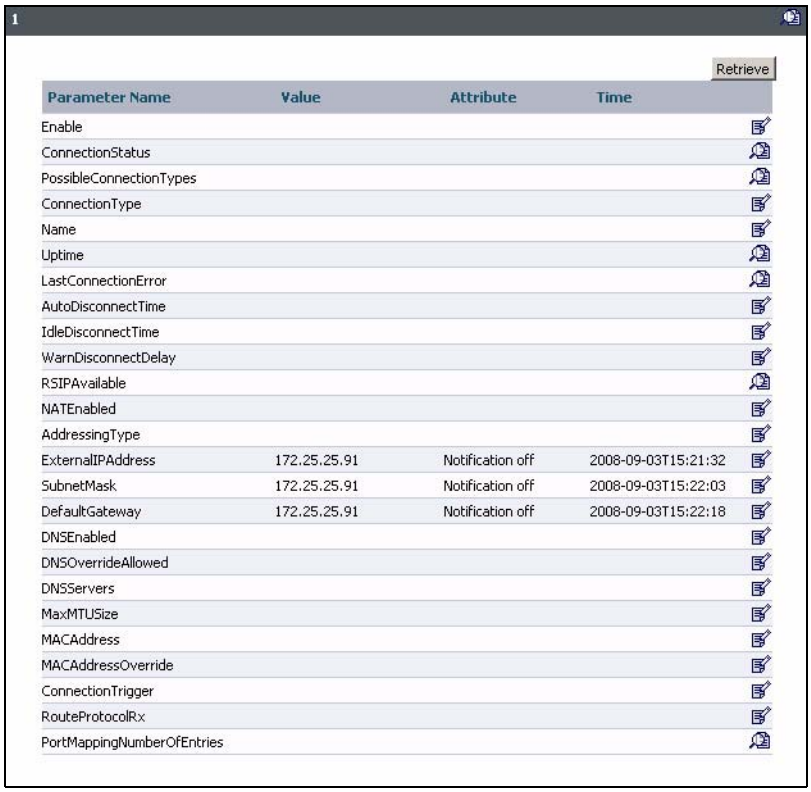
Figure 121 TR-069: WAN Device: WANIPConnection

15.13.1 WAN IP Connection Details

You can configure and view basic IP settings for the WAN connection in the detailed **WANIPConnection** screen.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number to display the screen as shown.

Figure 122 TR-069: WAN Device: WANIPConnection: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 59 TR-069: WAN Device: WANIPConnection: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this link is active; otherwise this field displays **0**.
ConnectionStatus	This field displays the link status (**Unconfigured**, **Connecting**, **Connected**, **PendingDisconnect**, **Disconnecting**, **Disconnected**).
PossibleConnectionTypes	This field displays the connection type(s) this link supports.
ConnectionType	This field displays the connection type for this link.
Name	This field displays a descriptive name (up to 256 characters) for this link.
Uptime	This field displays the number of seconds the link has been up.

Table 59 TR-069: WAN Device: WANIPConnection: Details (continued)

PARAMETER NAME	VALUE
LastConnectionError	This field displays the cause for the last failed connection attempt.
AutoDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) the device is to wait before disconnecting the link.
IdleDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) of inactivity timeout for a link. When the time is reached without any network activity through the link, the device automatically disconnect the link.
WarnDisconnectDelay	This field displays the number of seconds (between 0 and 4294967295) before the device disconnects the link.
RSIPAvailable	This field displays whether the Realm-specific IP (RSIP) feature is supported on the device.
NATEnabled	This field displays **1** to indicate that the NAT (Network Address Translation) feature is enabled for this link; otherwise the field displays **0**.
AddressingType	This field displays **DHCP** to set the device to obtain a dynamic IP address from the ISP for this link on the WAN. This field displays **Static** to set the link to use a fixed WAN IP address. Then configure the fields below.
ExternalIPAddress	This field is applicable when you select **Static** in the **AddressingType** field.
SubnetMask	This field is applicable when you select **Static** in the **AddressingType** field.
DefaultGateway	This field is applicable when you select **Static** in the **AddressingType** field.
DNSEnabled	This field displays **1** to set the device to resolve domain names through this link; otherwise, this field is **0**.
DNSOverrideAllowed	This field displays **1** to allow a non-empty DNS address to be replaced by a DNS entry received on the WAN; otherwise, this field is **0**.
DNSServers	This field displays the IP address(es) of the DNS server(s). Multiple IP addresses are separated by a comma.
MaxMTUSize	This field displays the maximum size (between 1 and 1540) for the Ethernet frames allowed on this link.
MACAddress	This field is applicable when you select **Enable** in the **MACAdddressOverride** field. This field displays the MAC address on this link.
MACAddressOverride	This field displays **1** to change the MAC address of this interface in the **MACAddress** field. This field is **0** if you do not allow MAC address modification.
ConnectionTrigger	This field displays how the device will establish a connection for Internet access. Choices are **AlwaysOn**, **OnDemand** and **Manual**.
RouteProtocolRx	This field displays the routing protocol (**RIP1**, **RIP2** or **OSPF**) the link is to use. **Off** means the routing feature is disabled.
PortMappingNumberOfEntries	This field displays the number of port mappings on this link.

15.13.2 Port Mapping Table

Use the **PortMapping** screen to view the port mapping instance for the WAN IP connection. Refer to Section 11.2.4 on page 132 for other field descriptions.

1 Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.

2 Click a number and **WANConnectionDevice**.
3 Click a number and **WANIPConnection**.
4 Click a number and **PortMapping** to display the screen as shown.

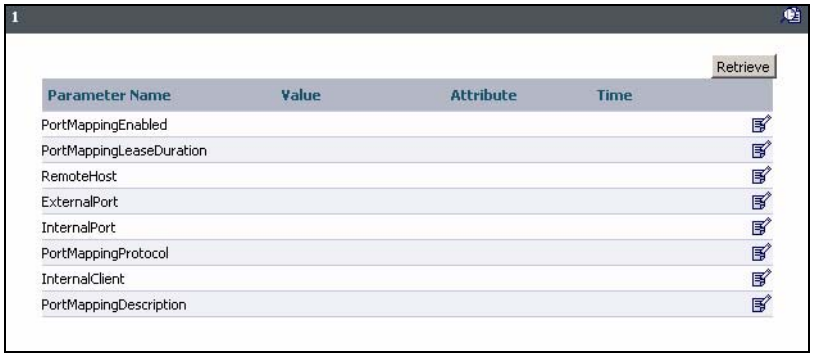
Figure 123 TR-069: WAN Device: WANIPConnection: PortMapping

15.13.3 Port Mapping Table Details

Use the detailed **PortMapping** screen to configure the port mapping settings for the WAN IP connection.

1 Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2 Click a number and **WANConnectionDevice**.
3 Click a number and **WANIPConnection**.
4 Click a number and **PortMapping**.
5 Click a number to display the screen as shown.

Figure 124 TR-069: WAN Device: WANIPConnection: PortMapping: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 60 TR-069: WAN Device: WANIPConnection: PortMapping: Details

PARAMETER NAME	VALUE
PortMappingEnabled	This field displays **1** to indicate that the port mapping entry on this link is enabled; otherwise this field displays **0**.
PortMappingLeaseDuration	This field displays the time (between 1 to 4294967295 seconds) the device stores the port mapping entry. After this, the entry is removed from the port mapping table. 0 means that a port mapping entry is static and cannot be removed from the port mapping table.
RemoteHost	This field displays the IP address of the remote host device. If this field is blank, it indicates a wildcard which the device must support. In this case, when a packet is sent to the external port on the WAN, the device will forward the packet to the internal port.

Table 60 TR-069: WAN Device: WANIPConnection: PortMapping: Details (continued)

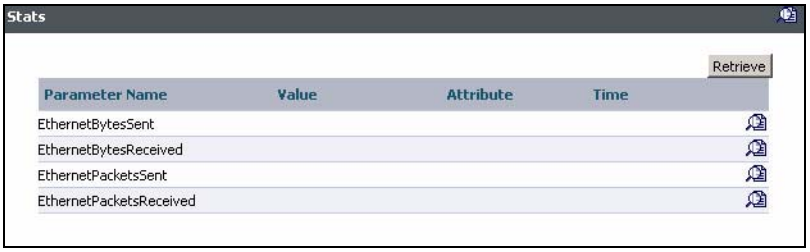
PARAMETER NAME	VALUE
ExternalPort	This field displays a port number (between 0 and 4294967295) the device listens on for NAT connection requests. 0 indicates a wildcard. This sets the device to forward a wildcard packet to the internal port.
InternalPort	This field displays a port number for the internal port (between 1 and 4294967295) to which the device forwards packets with wildcard.
PortMappingProtocol	This field displays the protocol (**UDP** or **TCP**) used for port mapping.
InternalClient	This field displays the IP address or domain name of a host on the LAN. To allow UDP port mapping or multiple NAT clients to use the same port number, use the broadcast address of 255.255.255.255 for the internal client.
PortMappingDescription	This field displays a descriptive name (up to 256 characters) to identify this port mapping entry.

15.13.4 WAN IP Connection Statistics

Display the **Stats** screen to view the statistics of all IP connections on the WAN interface.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number and **Stats** to display the screen as shown.

Figure 125 TR-069: WAN Device: WANIPConnection: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 61 TR-069: WAN Device: WANIPConnection: Stats

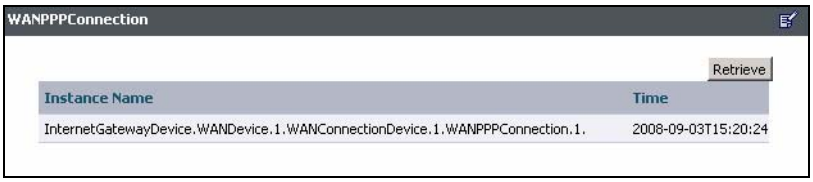
PARAMETER NAME	VALUE
EthernetBytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
EthernetBytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
EthernetPacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
EthernetPacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

15.14 WAN PPP Connection

Display the **WANPPPConnection** screen to view PPP connection instance on the WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection** to display the screen as shown.

Figure 126 TR-069: WAN Device: WANPPPConnection



15.14.1 WAN PPP Connection Details

Display the detailed **WANPPPConnection** screen to configure and view basic PPP settings for Internet access on the WAN interface.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number to display the screen as shown.

Figure 127 TR-069: WAN Device: WANPPPConnection: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 62 TR-069: WAN Device: WANPPPConnection: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this link is active; otherwise, it displays **0**.
ConnectionStatus	This field displays the link status
PossibleConnectionTypes	This field displays the connection type(s) this link supports.
ConnectionType	This field displays the connection type for this link.
Name	This field displays a descriptive name (up to 256 characters) for this link.
Uptime	This field displays the number of seconds the link has been up.
LastConnectionError	This field displays the cause for the last failed connection attempt.
AutoDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) the device is to wait before disconnecting the link. **0** means you do not want the device to disconnect the link automatically.

Table 62 TR-069: WAN Device: WANPPPConnection: Details (continued)

PARAMETER NAME	VALUE
IdleDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) of inactivity before a link times out. When the time is reached without any network activity through the link, the device automatically disconnects the link. **0** means you do not want the device to disconnect the link automatically.
WarnDisconnectDelay	This field displays the number of seconds (between 0 and 4294967295) before the device changes the state of the link to the disconnecting state.
RSIPAvailable	This field displays whether the Realm-specific IP (RSIP) feature is supported on the device.
NATEnabled	This field displays **1** to indicate that the NAT (Network Address Translation) feature is enabled for this link; otherwise, this field displays **0**.
Username	This field displays the Internet access account user name (up to 64 characters) provided by the ISP for authentication.
Password	This field displays the Internet access account password (up to 64 characters) provided by the ISP for authentication.
PPPEncryptionProtocol	This field displays the protocol used for PPP encryption between the device and the ISP's network.
PPPCompressionProtocol	This field displays the protocol used for PPP traffic compression between the device and the ISP's network.
PPPAuthenticationProtocol	This field displays the protocol used for PPP connection authentication between the device and the ISP's network.
ExternalIPAddress	This field displays the IP address used by NAT for this connection.
RemoteIPAddress	This field displays the remote IP address for this connection.
MaxMRUSize	This field displays the maximum size (between 1 and 1540) for the Ethernet frames allowed on this link.
CurrentMRUSize	This field displays the current configured maximum frame size allowed from a remote host.
DNSEnabled	This field displays **1** to set the device to resolve domain names through this link; otherwise, this field is **0**.
DNSOverrideAllowed	This field displays **1** to allow a non-empty DNS address to be replaced by a DNS entry received on the WAN; otherwise, this field displays **0**.
DNSServers	This field displays the IP address(es) of the DNS server(s). Multiple IP addresses are separated by a comma.
MACAddress	This field is applicable when you select **Enable** in the **MACAdddressOverride** field. This field displays the MAC address of this interface on the device.
MACAddressOverride	This field displays **1** to allow change of MAC address on this interface in the **MACAddress** field. This field displays **0** if you do not allow MAC address modification.
TransportType	This field displays the transport protocol for the PPP connection.
PPPoEACName	This field displays the descriptive name for the PPPoE Access Concentrator (AC).
PPPoEServiceName	This field displays the descriptive name for the PPPoE service.
ConnectionTrigger	This field displays how the device will establish a connection (**AlwaysOn**, **OnDemand** and **Manual**) for Internet access.

Table 62 TR-069: WAN Device: WANPPPConnection: Details (continued)

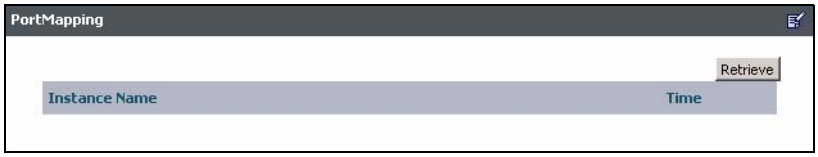
PARAMETER NAME	VALUE
RouteProtocolRx	This field displays the routing protocol (**RIP1**, **RIP2** or **OSPF**) the link is to use. **Off** disables the routing feature.
PPPLCPEcho	This field displays the time (in seconds) for PPP Link Control Protocol (LCP) echo.
PPPLCPEchoRetry	This field displays the time (in seconds) for PPP Link Control Protocol (LCP) echo retry.
PortMappingNumberOfEntries	This field displays the number of port mappings on this link.

15.14.2 Port Mapping Table

Use the **PortMapping** screen to view the port mapping instance for the WAN PPP connection. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **PortMapping** to display the screen as shown.

Figure 128 TR-069: WAN Device: WANPPPConnection: PortMapping

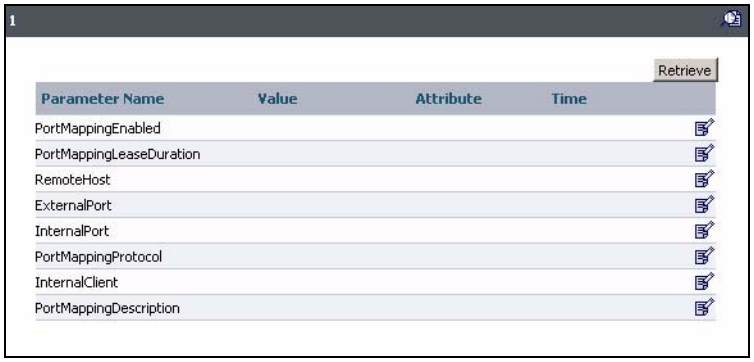


15.14.3 Port Mapping Table Details

Use the detailed **PortMapping** screen to configure the port mapping settings for the WAN PPP connection.

1. Select a registered device in the Device List window and click **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **PortMapping**.
5. Click a number to display the screen as shown.

Figure 129 TR-069: WAN Device: WANPPPConnection: PortMapping: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 63 TR-069: WAN Device: WANPPPConnection: PortMapping: Details

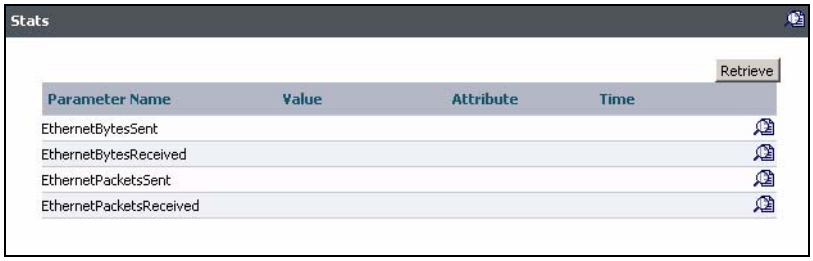
PARAMETER NAME	VALUE
PortMappingEnabled	This field displays **1** to indicate that the port mapping entry on this link is enabled; otherwise this field displays **0**.
PortMappingLeaseDuration	This field displays the time (between 1 to 4294967295 seconds) the device stores the port mapping entry. After this, the entry is removed from the port mapping table. 0 means that a port mapping entry is static and cannot be removed from the port mapping table.
RemoteHost	This field displays the IP address of the remote host device. If this field is blank, it indicates a wildcard which the device must support. In this case, when a packet is sent to the external port on the WAN, the device will forward the packet to the internal port.
ExternalPort	This field displays a port number (between 0 and 4294967295) the device listens on for NAT connection requests. 0 indicates a wildcard. This sets the device to forward a wildcard packet to the internal port.
InternalPort	This field displays a port number for the internal port (between 1 and 4294967295) to which the device forwards packets with wildcard.
PortMappingProtocol	This field displays the protocol (**UDP** or **TCP**) used for port mapping.
InternalClient	This field displays the IP address or domain name of a host on the LAN. To allow UDP port mapping or multiple NAT clients to use the same port number, use the broadcast address of 255.255.255.255 for the internal client.
PortMappingDescription	This field displays a descriptive name (up to 256 characters) to identify this port mapping entry.

15.14.4 WAN PPP Connection Statistics

Display the **Stats** screen to view the statistics of all PPP connections on the WAN interface.

1. Select a registered device in the Device List window and click **InternetGatewayDevice > WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **Stats** to display the screen as shown.

Figure 130 TR-069: WAN Device: WANPPPConnection: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 64 TR-069: WAN Device: WANPPPConnection: Stats

PARAMETER NAME	VALUE
EthernetBytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
EthernetBytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
EthernetPacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
EthernetPacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

PART IV
Internet Gateway Device 1.1 (TR-098)

This part contains the following chapters.

- General Device Setup (199)
- LAN Device (229)
- WAN Device (247)

16

General Device Setup

This chapter describes the general **Configuration** screens you display to view and set basic device settings.

16.1 Internet Gateway Device

You can view the number and type of interfaces on a device.

1. Log into Vantage Access using a manager account and click the **Provision Manager** icon in the control panel.
2. Select a device in the Device List window.
3. Click **Provision** > **Data Model** > **InternetGatewayDevice**.

Figure 131 TR-098: InternetGatewayDevice

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 65 TR-098: InternetGatewayDevice

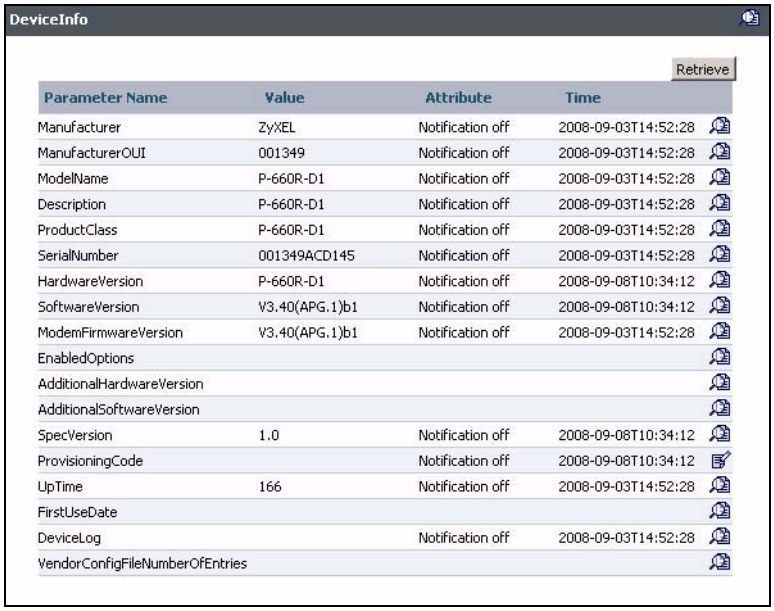
PARAMETER NAME	VALUE
DeviceSummary	This field displays a summary information of the device.
LANDeviceNumberOfEntries	This field displays the number of LAN interfaces on the selected device.
WANDeviceNumberOfEntries	This field displays the number of WAN interfaces on the selected device.

16.2 Device Information

View detailed device information in the **DeviceInfo** screen.

Click **Provision** > **Data Model** > **InternetGatewayDevice** > **DeviceInfo** to display the general information of the selected device.

Figure 132 TR-098: DeviceInfo



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 66 TR-098: DeviceInfo

PARAMETER NAME	VALUE
Manufacturer	This is the name of the company that produced this device.
ManufacturerOUI	This field displays the six-hexadecimal-digit OUI (Organization Unit Identifier) of the company. The OUI is a unique number assigned by the IANA. Devices produced by the same company have the same hard-wired OUI.
ModelName	This field displays the device model name.
Description	This field displays additional information about the device.
ProductClass	This field identifies the product class or product over which the **SerialNumber** parameter is unique.
SerialNumber	This field displays the device serial number.
HardwareVersion	This field displays the hardware model name.
SoftwareVersion	This field displays the firmware version number.
ModemFirmware Version	This field displays the modem firmware version number.
EnabledOptions	This field displays the name of the options enabled on the device.
AdditionalHardwareVersion	This field displays the available information of the additional hardware version.
AdditionalSoftwareVersion	This field displays the available information of the additional software version.
SpecVersion	This field displays the specification version implemented on the device.
ProvisioningCode	The provisioning code is used by the service provider to identify specific parameter settings for the device. Enter the identifier of the DSL service provider or provisioning information. You can enter up to 64 characters (use only A-Z, 0-9 and “.” with no spaces allowed).

Table 66 TR-098: DeviceInfo (continued)

PARAMETER NAME	VALUE
UpTime	This field displays the time (in seconds) since the device was last restarted.
FirstUseDate	This field displays the time and date the device first established a network connection.
DeviceLog	Enter additional information for this device.
VendorConfigFile NumberOfEntries	This field displays the number of configuration files.

16.3 Device Configuration

Display the **DeviceConfig** screen to view general information about the configuration file on a device.

Click **Provision** > **Data Model** > **InternetGatewayDevice** > **DeviceConfig.**

Figure 133 TR-098: DeviceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 67 TR-098: DeviceConfig

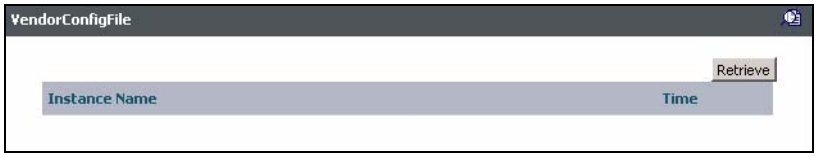
PARAMETER NAME	VALUE
PersistentData	This field displays the configuration data that must remain intact after a device system reboot.
ConfigFile	This field displays the name of the vendor specific configuration file used for the device.

16.4 Vendor Configuration File

The **VendorConfigFile** screen displays the name of the vendor configuration file and the time it was first applied on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Click **Provision** > **Data Model** > **InternetGatewayDevice** > **DeviceInfo** > **VendorConfigFile. Click on a file name to display** detailed information.

Figure 134 TR-098: VendorConfigFile

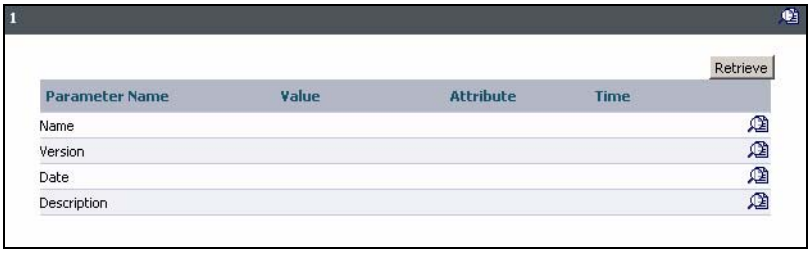


16.4.1 Vendor Configuration File Details

This screen displays detailed vendor configuration file information. You can find this screen using one of the following methods:

- click a file name in the **VendorConfigFile** screen
- click **Provision** > **Data Model** > **InternetGatewayDevice** > **DeviceInfo** > **VendorConfigFile** and click a number.

Figure 135 TR-098: VendorConfigFile: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 68 TR-098: VendorConfigFile: Details

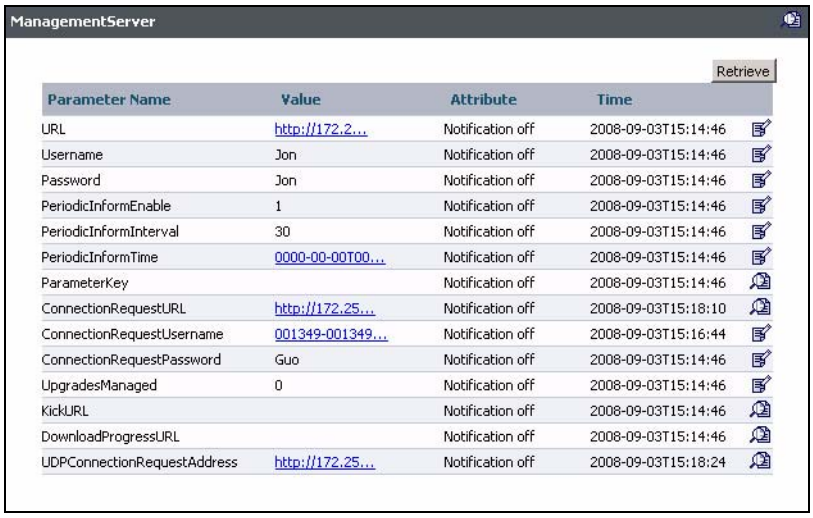
PARAMETER NAME	VALUE
Name	This field displays the name of the vendor configuration file applied to the device.
Version	This field displays the version number of the vendor configuration file.
Date	This field displays the time and date the vendor configuration file was applied on the device.
Description	This field displays a description about the vendor configuration file.

16.5 Management Server

Use the **Management Server** screen to configure settings on the device to connect to the Vantage Access server.

Click **Provision** > **Data Model** > **InternetGatewayDevice** > **ManagementServer.**

Figure 136 TR-098: ManagementServer



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 69 TR-098: ManagementServer

PARAMETER NAME	VALUE
URL	This field displays the address of the Vantage Access server to which the device connects for remote management. For example, “http://www.zyxel.com/TR098”.
Username	This field displays the user name the device uses to access Vantage Access.
Password	This field displays the password (up to 256 alphanumeric characters) associated with the user name above. **Note: You must configure the same access user name and password on the device and the Vantage Access server.**
PeriodicInformEnable	This field displays **true** to indicate that the device is set to regularly send device information updates to Vantage Access. This field displays **false** to indicate that this feature is disabled. In this case, you must then manually update device information changes.
PeriodicInformInterval	This field is applicable when the **PeriodicInformEnable** field is **1**. This field displays the time (in seconds) the device is to wait before sending device request information updates to Vantage Access.
PeriodicInformTime	This field is applicable when in the **PeriodicInformEnable** field is **1**. This field displays the reference time and date the device is to initiate the information updates. The time in the format yyyy-mm-ddThh:mm:ss.
ParameterKey	This field displays the parameter that is changed from the most recent information update.
ConnectionRequestURL	This field displays the URL of the device to which Vantage Access sends a connection request.
ConnectionRequestUsername	This field displays the user name Vantage Access uses to access the device. This is required if you want Vantage Access to initiate a connection and access the device.
ConnectionRequestPassword	This field displays the password associated with the user name above.

Table 69 TR-098: ManagementServer (continued)

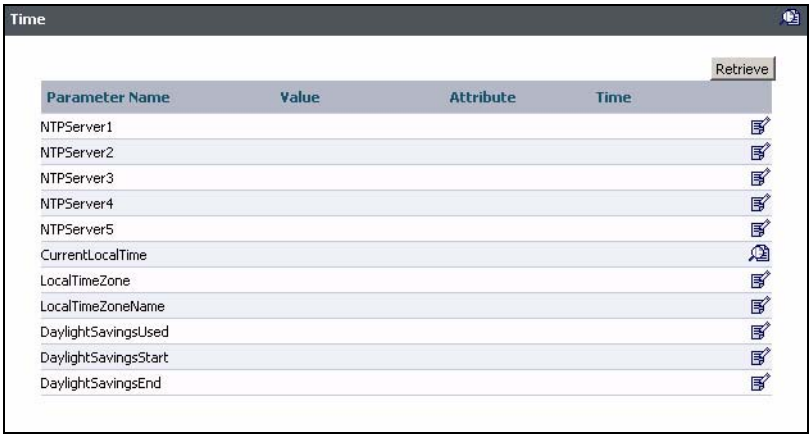
PARAMETER NAME	VALUE
UpgradesManaged	This field displays **1** to allow Vantage Access to upgrade firmware on the device. This field displays **0** to indicate that remote firmware upgrade through Vantage Access is disabled.
KickURL	This field displays the URL on the LAN from which the device can initiate a Kick request.
DownloadProgressURL	This field displays the URL of a website on the LAN to which a user's web browser is redirected to display the file transfer progress of the device.

16.6 Time

Use the **Time** screen to configure time settings (such as the network time server and time zone) on the device.

Click **Provision** > **Data Model** > **InternetGatewayDevice** > **Time.**

Figure 137 TR-098: Time



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 70 TR-098: Time

PARAMETER NAME	VALUE
NTPServer1 .. 5	This field displays the IP address or host name of the time server the device is to use to update the system time. For example, "http://www.zyxel.com".
CurrentLocalTime	This field displays the current system time on the device.
LocalTimeZone	This field displays the time offset from the UTC (Universal Time Coordinate). For example, +08:00.
LocalTimeZoneName	This field displays the name of the local time zone.
DaylightSavingsUsed	This field displays **1** to indicate that daylight savings time is enabled on the device. This field displays **0** if this feature is disabled.

Table 70 TR-098: Time (continued)

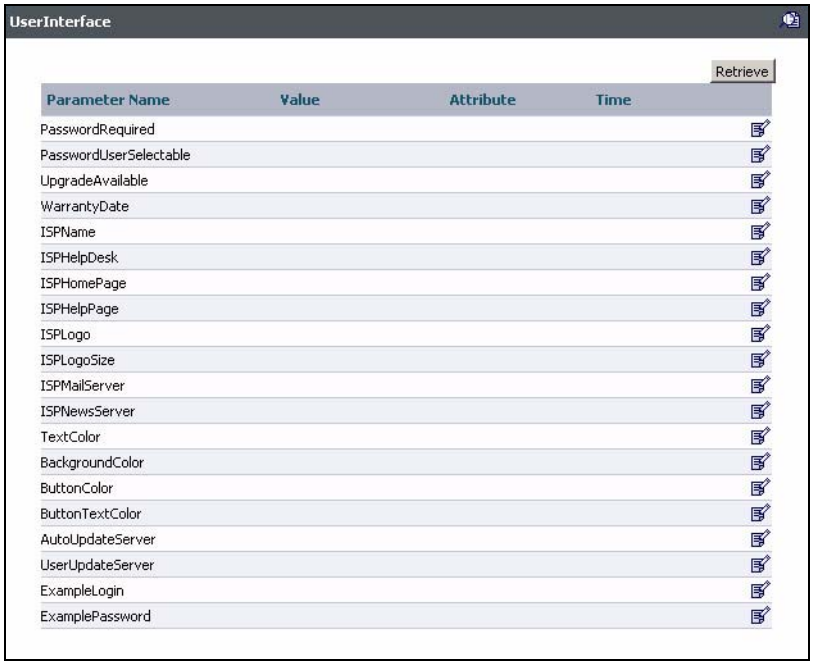
PARAMETER NAME	VALUE
DaylightSavingsStart	This field is applicable if the **DaylightSavingsUsed** field is **1**. This field displays the starting date of the daylight savings time in the format 0000-00-00T00:00:00.
DaylightSavingsEnd	This field is applicable if the **DaylightSavingsUsed** field is **1**. This field displays the end date of the daylight savings time in the format 0000-00-00T00:00:00.

16.7 User Interface

Use the **UserInterface** screen to configure remote management settings to access the web configurator on the device.

Click **Provision** > **Data Model** > **InternetGatewayDevice** > **UserInterface to display the screen as shown.**

Figure 138 TR-098: UserInterface



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 71 TR-098: UserInterface

PARAMETER NAME	VALUE
PasswordRequired	This field displays **1** if a password is required to log into the web configurator on the device. This field displays **0** if a password is not required.
PasswordUserSelectable	This field displays **1** if a user can specify a different password for Auto-configuration on the device; otherwise it displays **0**.

Table 71 TR-098: UserInterface (continued)

PARAMETER NAME	VALUE
UpgradeAvailable	This field displays **1** to allow user to view the upgrade information on the device; otherwise it displays **0**.
WarrantyDate	This field displays the time the warranty on the device expires.
ISPName	This field displays the name of your Internet Service Provider (ISP).
ISPHelpDesk	This field displays the telephone number of your ISP's help desk.
ISPHomePage	This field displays the website address of your ISP's home page.
ISPHelpPage	This field displays the website address of your ISP's online support web page.
ISPLogo	This field displays the base64 encoded character for your ISP's logo graphic. The graphic can be a GIF or JEPG file smaller than 4095 bytes.
ISPLogoSize	This field displays the size of the logo graphic file.
ISPMailServer	This field displays the address of your ISP's mail server.
ISPNewsServer	This field displays the address of your ISP's news server.
TextColor	This field displays the color (in six-character RGB number) of the text in the web configurator. For example, FFFFFF means white.
BackgroundColor	This field displays the color (in six-character RGB number) of the background in the web configurator. For example, FFFFFF means white.
ButtonColor	This field displays the color (in six-character RGB number) of the buttons in the web configurator. For example, FFFFFF means white.
ButtonTextColor	This field displays the color (in six-character RGB number) of the text on the buttons in the web configurator. For example, FFFFFF means white.
AutoUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen shows **1** (see Section 16.5 on page 202). This field displays the address of the server the device is to check for new firmware. If new firmware is available, the device is to update the firmware automatically.
UserUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen shows **0** (see Section 16.5 on page 202). This field displays the address of the server a user can check for new firmware updates available for the device.
ExampleLogin	This field displays the correct username format. This is to show users the correct format to enter.
ExamplePassword	This field displays the correct password format. This is to show users the correct format to enter.

16.8 Layer3 Forwarding

Use the **Layer3Forwarding** screen to view the current layer 3 forwarding status and the number of forwarding entries on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer3Forwarding.**

Figure 139 TR-098: Layer3Forwarding

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 72 TR-098: Layer3Forwarding

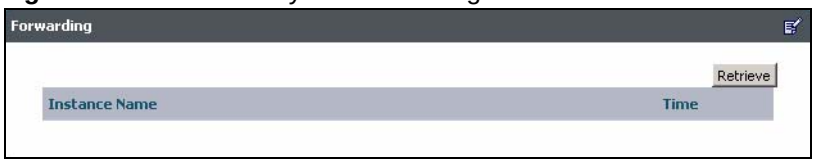
PARAMETER NAME	VALUE
Default ConnectionService	This field displays the complete hierarchical name for the default WAN interface.
ForwardNumberofEntries	This field displays the number of forwarding entries.

16.8.1 Layer3 Forwarding Table

The **Forwarding** screen displays the list of forwarding tables on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Click **Provision** > **Data Model > InternetGatewayDevice > Layer3Forwarding > Forwarding.**

Figure 140 TR-098: Layer3 Forwarding Table

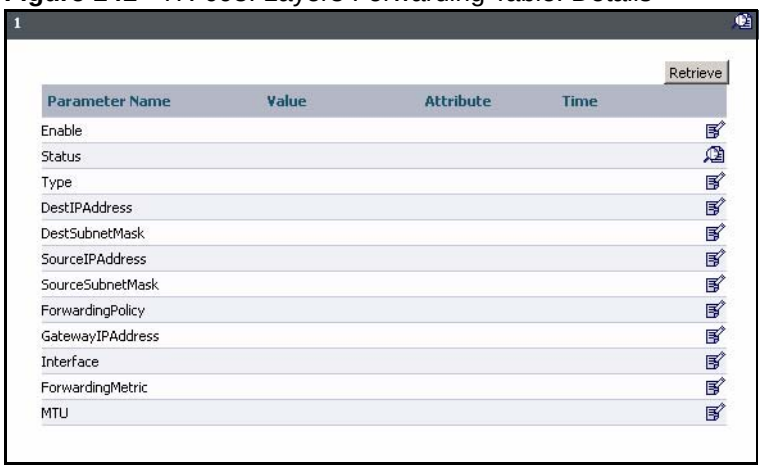


16.8.2 Layer3 Forwarding Table Details

Use the detailed **Forwarding** screen to configure the layer 3 forwarding table on the device.

Select a registered device in the Device List window and click **Provision > Data Model > InternetGatewayDevice > Layer3Forwarding > Forwarding.** Then click on an index number.

Figure 141 TR-098: Layer3 Forwarding Table: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 73 TR-098: Layer3 Forwarding: Forwarding

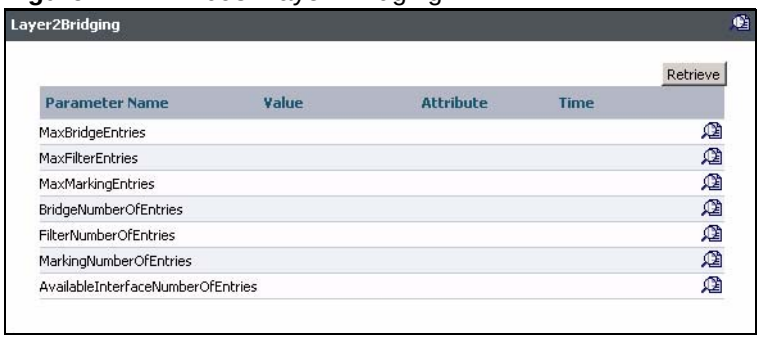
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that entry in the forwarding table is enabled. A value of **0** means that the rule is disabled. This is the default setting for new forwarding entries.
Status	This field displays the status of the forwarding entry.
Type	This field displays the route type. **Default** sets the device to route packets with any destination. **Host** sets the device to route packets to a specific destination IP address. **Network** sets the device to route packets to an IP network.
DestIPAddress	This field displays the destination IP address in dotted decimal notation for the route entry.
DestSubnetMask	This field displays the destination subnet mask in dotted decimal notation for the route entry.
SourceIPAddress	This field displays the source IP address in dotted decimal notation for the route entry.
SourceSubnetMask	This field displays the source subnet mask in dotted decimal notation for the route entry.
ForwardingPolicy	This field displays the index number of the forwarding policy the device is to use.
GatewayIPAddress	This field displays the IP address of the gateway in dotted decimal notation for the route entry.
Interface	This field displays the hierarchical name of the WAN interface associated to this route entry. For example, “InternetGatewayDevice.WANDevice.1.-WANConnectionDevice.1.WANPPPConnection.1”
ForwardingMetric	This field displays the number of hops to the destination. This is associated to the cost of the route. **-1** means this route is not used to forward traffic.
MTU	This field displays the maximum Ethernet packet size allowed on this route.

16.9 Layer2 Bridging

Use the **Layer2Bridging** screen to configure the bridge settings between layer2 LAN and/or WAN interfaces on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging**.

Figure 142 TR-098: Layer2Bridging



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 74 TR-098: Layer2Bridging

LABEL	DESCRIPTION
MaxBridgeEntries	This field displays the maximum number of entries in the bridge table.
MaxFilterEntries	This field displays the maximum number of entries in the filter table.
MaxMarkingEntries	This field displays the maximum number of entries in the marking table.
BridgeNumberOfEntries	This field displays the number of entries in the bridge table.
FilterNumberOfEntries	This field displays the number of entries in the filter table.
MarkingNumberOfEntries	This field displays the number of entries in the marking table.
AvailableInterfaceNumberOfEntries	This field displays the number of entries in the interface table.

16.9.1 Bridging Table

Use the **Bridge** screen to view the bridge table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **Bridge**.

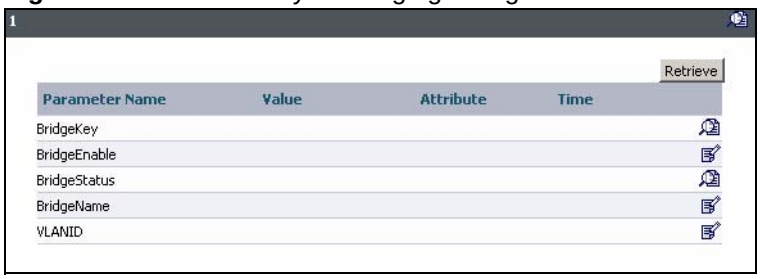
Figure 143 TR-098: Layer2Bridging: Bridge

16.9.2 Bridging Table Details

Use the detailed **Bridge** screen to view and configure the bridge table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **Bridge**. Click a number to display the screen.

Figure 144 TR-098: Layer2Bridging: Bridge: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 75 TR-098: Layer2Bridging: Bridge: Details

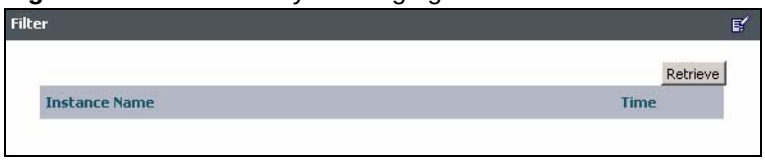
LABEL	DESCRIPTION
BridgeKey	This field displays the index number of the entry.
BridgeEnable	This field indicates whether the entry is activated or not.
BridgeStatus	This field displays the status of the entry.
BridgeName	This field displays the descriptive name of the entry.
VLANID	This field displays the ID of the VLAN to which the entry belongs.

16.9.3 Filter Table

Use the **Filter** screen to view the filter table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **Filter**.

Figure 145 TR-098: Layer2Bridging: Filter



16.9.4 Filter Table Details

Use the detailed **Filter** screen to view and configure the filter table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **Filter**. Click a number to display the screen.

Figure 146 TR-098: Layer2Bridging: Filter: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 76 TR-098: Layer2Bridging: Filter: Details

LABEL	DESCRIPTION
FilterKey	This field displays the index number of the filter table entry.
FilterEnable	This field displays whether the entry is enabled.
FilterStatus	This field displays the status of the entry.
FilterBridgeReference	This field displays the index number of the bridge table entry associated with this filter table entry.
ExclusivityOrder	This field displays whether the device is to match the filter table exclusively or non-exclusively.
FilterInterface	This field displays the name of the interface to which this filter table entry is applied.
VLANIDFilter	This field displays the VLAN ID of the packets the device is to filter on the specified interface.
AdmitOnlyVLANTagged	This field displays whether the device is to allow tagged-only packets.
EthertypeFilterList	This field displays the Ethernet type(s) for the filter list. Multiple entries are separated by commas.
EthertypeFilterExclude	This field displays whether the filter is to allow packets with the Ethernet type not specified.
SourceMACAddressFilterList	This field displays the list of source MAC address(es) to filter. Multiple entries are separated by commas.

Table 76 TR-098: Layer2Bridging: Filter: Details (continued)

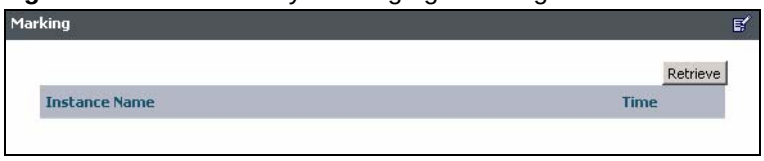
LABEL	DESCRIPTION
SourceMACAddressFilterExclude	This field displays whether the filter is to allow packets with the source MAC address(es) not specified.
DestMACAddressFilterList	This field displays the list of destination MAC address(es) to filter. Multiple entries are separated by commas.
DestMACAddressFilterExclude	This field displays whether the filter is to allow packets with the destination MAC address(es) not specified.
SourceMACFromVendorClassIDFilter	This field displays the list of device vendor ID (obtained through DHCP) to which source MAC address filter is applied. Multiple entries are separated by commas.
SourceMACFromVendorClassIDFilterExclude	This field displays whether the filter is to allow packets with the vendor ID not specified for the source MAC.
DestMACFromVendorClassIDFilter	This field displays the list of device vendor ID (obtained through DHCP) to which destination MAC address filter is applied. Multiple entries are separated by commas.
DestMACFromVendorClassIDFilterExclude	This field displays whether the filter is to allow packets with the vendor ID not specified for the destination MAC.
SourceMACFromClientIDFilter	This field displays the list of DHCP client ID (option61, RFC2132) to which source MAC address filter is applied. Multiple entries are separated by commas.
SourceMACFromClientIDFilterExclude	This field displays whether the filter is to allow packets with the client ID not specified for the source MAC.
DestMACFromClientIDFilter	This field displays the list of DHCP client ID (option61, RFC2132) to which destination MAC address filter is applied. Multiple entries are separated by commas.
DestMACFromClientIDFilterExclude	This field displays whether the filter is to allow packets with the client ID not specified for the destination MAC.
SourceMACFromUserClassIDFilter	This field displays the list of DHCP user class identification ID (option77, RFC3004) to which source MAC address filter is applied. Multiple entries are separated by commas.
SourceMACFromUserClassIDFilterExclude	This field displays whether the filter is to allow packets with the class identification ID not specified for the source MAC.
DestMACFromUserClassIDFilter	This field displays the list of DHCP user class identification ID (option77, RFC3004) to which destination MAC address filter is applied. Multiple entries are separated by commas.
DestMACFromUserClassIDFilterExclude	This field displays whether the filter is to allow packets with the class identification ID not specified for the destination MAC.

16.9.5 Marking Table

Use the **Marking** screen to view the marking table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **Marking**.

Figure 147 TR-098: Layer2Bridging: Marking

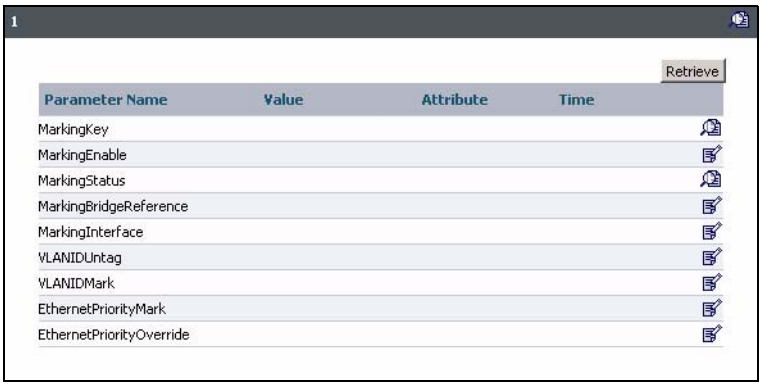


16.9.6 Marking Table Details

Use the detailed **Marking** screen to view and configure the marking table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **Marking**. Click a number to display the screen.

Figure 148 TR-098: Layer2Bridging: Marking: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 77 TR-098: Layer2Bridging: Marking: Details

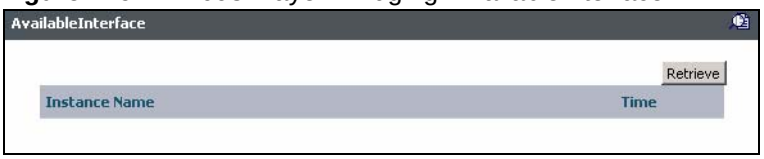
LABEL	DESCRIPTION
MarkingKey	This field displays the index number of the marking table entry.
MarkingEnable	This field displays whether the marking table entry is activated or not.
MarkingStatus	This field displays the status of the marking table entry.
MarkingBridgeReference	This field displays the index number of the bridge table entry associated with this marking table entry.
MarkingInterface	This field displays the name of the interface to which the device applies this marking table entry.
VLANIDUntag	This field displays whether the device removes the VLAN tag from outgoing packets on the interface.
VLANIDMark	This field displays the VLAN ID of the outgoing packets to which this marking table entry is to apply.
EthernetPriorityMark	This field displays the Ethernet priority level to add to incoming packets on the interface. -1 means that the device does not change the priority level assigned by the classifier.
EthernetPriorityOverride	This field displays whether the priority level marking is to apply to all packets on the interface.

16.9.7 Available Interface Table

Use the **AvailableInterface** screen to view the interface table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **AvailableInterface**.

Figure 149 TR-098: Layer2Bridging: AvailableInterface

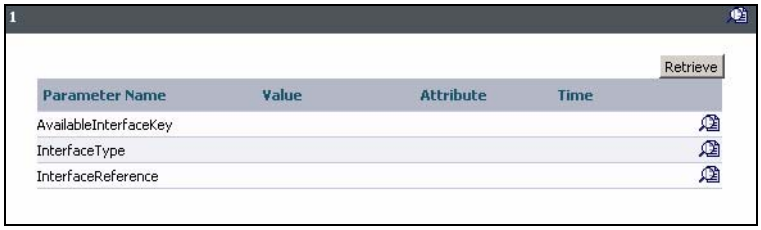


16.9.8 Available Interface Table Details

Use the detailed **AvailableInterface** screen to view and configure the interface table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **AvailableInterface**. Click a number to display the screen.

Figure 150 TR-098: Layer2Bridging: AvailableInterface: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 78 TR-098: Layer2Bridging: AvailableInterface: Details

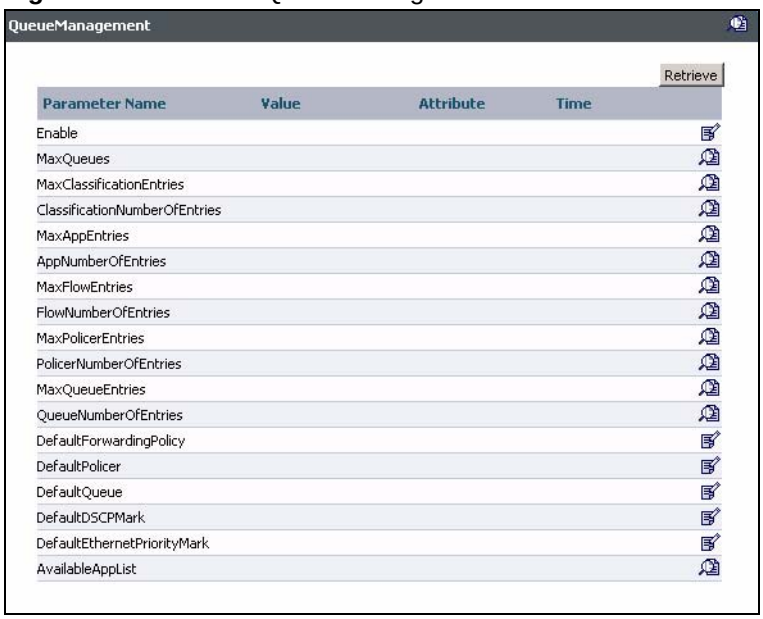
LABEL	DESCRIPTION
AvailableInterfaceKey	This field displays the index number of the available interface table entry.
InterfaceType	This field displays the type of interface.
InterfaceReference	This field displays the parameter name of the interface.

16.10 Queue Management

Use the **QueueManagement** screen to configure settings to manage queues on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement**.

Figure 151 TR-098: QueueManagement



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 79 TR-098: QueueManagement

LABEL	DESCRIPTION
Enable	This field displays whether queue management is activated or not.
MaxQueues	This field displays the maximum number of queues on the device.
MaxClassificationEntries	This field displays the maximum number of entries in the classification table.
ClassificationNumberOfEntries	This field displays the number of entries currently in the classification table.
MaxAppEntries	This field displays the maximum number of entries in the application table.
AppNumberOfEntries	This field displays the number of entries currently in the application table.
MaxFlowEntries	This field displays the maximum number of entries in the flow table.
FlowNumberOfEntries	This field displays the number of entries currently in the flow table.
MaxPolicerEntries	This field displays the maximum number of entries in the policer table.
PolicerNumberOfEntries	This field displays the number of entries currently in the policer table.
MaxQueueEntries	This field displays the maximum number of entries in the queue table.
QueueNumberOfEntries	This field displays the number of entries currently in the queue table.
DefaultForwardingPolicy	This field displays the index number of the forwarding policy table associated to the traffic.
DefaultPolicer	This field displays the index number of the default policer table for traffic without a specified classifier.

Table 79 TR-098: QueueManagement

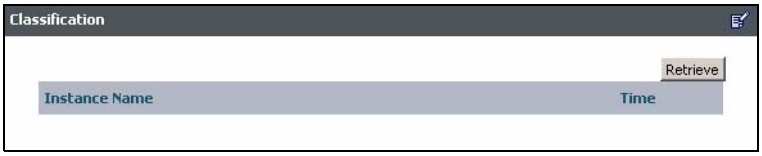
LABEL	DESCRIPTION
DefaultQueue	This field displays the index number of the default queue table for traffic without a specified classifier.
DefaultDSCPMark	This field displays the default DiffServ Code Point (DSCP) for traffic without a specified classifier.
DefaultEthernetPriorityMark	This field displays the default priority level for traffic without a specified classifier.
AvailableAppList	This field displays a comma-separated list of protocols supported by the application table.

16.10.1 Queue Classification

Use the **Classification** screen to view the classification table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement**> **Classification**.

Figure 152 TR-098: QueueManagement: Classification



16.10.2 Queue Classification Details

Use the detailed **Classification** screen to view and configure queue classification settings.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Classification**. Click a number to display the screen.

Figure 153 TR-098: QueueManagement: Classification: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 80 TR-098: QueueManagement: Classification: Details

LABEL	DESCRIPTION
ClassificationKey	This field displays the index number of the classification table.
ClassificationEnable	This field displays whether the classification table is activated or not.
ClassificationStatus	This field displays the status of the classification table.
ClassificationOrder	This field displays the precedence of the entry in the classification table.
ClassInterface	This field displays the interface associated to this classification table. This is one of the classification criteria.
DestIP	This field displays the destination IP address to be classified.
DestMask	This field displays the destination subnet mask of the destination IP address to be classified.
DestIPExclude	This field displays whether the device is to classify packets with destination IP address(es) not specified above.
SourceIP	This field displays the source IP address of the packet to be classified.
SourceMask	This field displays the subnet mask of the source IP address to be classified.
SourceIPExclude	This field displays whether the device is to classify packets whose source IP address is not specified above.
Protocol	This field displays the protocol number to classify.
ProtocolExclude	This field displays whether the device is to classify packets whose protocol type is not specified above.
DestPort	This field displays the destination port number to be classified.
DestPortRangeMax	This field displays the end of the destination port number range the device is to classify.
DestPortExclude	This field displays whether the device is to classify packets whose destination port number is not specified above or in the range.
SourcePort	This field displays the source port number to be classified.
SourcePortRangeMax	This field displays the end of the source port number range the device is to classify.
SourcePortExclude	This field displays whether the device is to classify packets whose source port number is not specified above.
SourceMACAddress	This field displays the source MAC address to be classified.
SourceMACMask	This field displays the network portion of the source MAC address the device is to classify.
SourceMACExclude	This field displays whether the device is to classify packets whose source MAC address is not specified above.
DestMACAddress	This field displays the destination MAC address to be classified.
DestMACMask	This field displays the network portion of the destination MAC address the device is to classify.
DestMACExclude	This field displays whether the device is to classify packets whose destination MAC address is not specified above.
Ethertype	This field displays the Ethernet type to be classified.
EthertypeExclude	This field displays whether the device is to classify packets whose Ethernet type is not specified above.

Table 80 TR-098: QueueManagement: Classification: Details

LABEL	DESCRIPTION
SSAP	This field displays the value of the Source link Service Access Point (SSAP) the device is to classify.
SSAPExclude	This field displays whether the device is to classify packets whose SSAP value is not specified above.
DSAP	This field displays the value of the Destination link Service Access Point (SSAP) the device is to classify.
DSAPExclude	This field displays whether the device is to classify packets whose DSAP value is not specified above.
LLCControl	This field displays the control value in the Logical Link Control (LLC) header the device is to classify.
LLCControlExclude	This field displays whether the device is to classify packets whose control value in the LLC header is not specified above.
SNAPOUI	This field displays the OUI value in the SNAP header the device is to classify.
SNAPOUIExclude	This field displays whether the device is to classify packets whose OUI value in the SNAP header is not specified above.
SourceVendorClassID	This field displays the source vendor class ID the device is to classify.
SourceVendorClassIDExclude	This field displays whether the device is to classify packets whose source vendor class ID is not specified above.
DestVendorClassID	This field displays the destination vendor class ID the device is to classify.
DestVendorClassIDExclude	This field displays whether the device is to classify packets whose destination vendor class ID is not specified above.
SourceClientID	This field displays the source client ID the device is to classify.
SourceClientIDExclude	This field displays whether the device is to classify packets whose source client ID is not specified above.
DestClientID	This field displays the destination client ID the device is to classify.
DestClientIDExclude	This field displays whether the device is to classify packets whose destination client ID is not specified above.
SourceUserClassID	This field displays the source user class ID the device is to classify.
SourceUserClassIDExclude	This field displays whether the device is to classify packets whose source user class ID is not specified above.
DestUserClassID	This field displays the destination user class ID the device is to classify.
DestUserClassIDExclude	This field displays whether the device is to classify packets whose destination user class ID is not specified above.
TCPACK	This field displays whether the device is to classify packets with ACK control bit set in all TCP segments.
TCPACKExclude	This field displays whether the class includes packets not marked by TCPACK above.
IPLengthMin	This field displays the minimum IP packet length in bytes.
IPLengthMax	This field displays the maximum IP packet length in bytes.
IPLengthExclude	This field displays whether the device is to classify packets whose IP packet length falls within the range specified above.
DSCPCheck	This field displays whether the device is to match the DSCP in the packets.
DSCPExclude	This field displays whether the device is to classify packets whose DSCP matches or does not match DSCPCheck above.

Table 80 TR-098: QueueManagement: Classification: Details

LABEL	DESCRIPTION
DSCPMark	This field displays whether the device is to change the DSCP settings on incoming packets.
EthernetPriorityCheck	This field displays whether the device is to match the priority level in the packets.
EthernetPriorityExclude	This field displays whether the device is to classify packets whose priority level matches or does not match EthernetPriorityCheck above.
EthernetPriorityMark	This field displays whether the device is to change the priority level on incoming packets.
VLANIDCheck	This field displays whether the device is to match the VLAN ID in the packets.
VLANIDExclude	This field displays whether the device is to classify packets whose VLAN ID matches or does not match VLANIDCheck above.
ForwardingPolicy	This field displays whether the device is to change the VLAN ID on incoming packets.
ClassPolicer	This field displays the name of the policer instance associated to this classification table.
ClassQueue	This field displays the name of the queue instance associated to this classification table.
ClassApp	This field displays the name of the application instance associated to this classification table.

16.10.3 Application Queue

Use the **App** screen to view the application queue list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **App**.

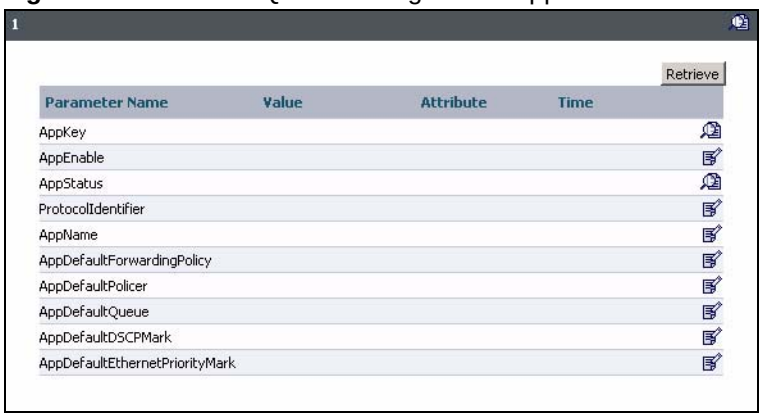
Figure 154 TR-098: QueueManagement: App

16.10.4 Application Queue Details

Use the detailed **App** screen to view and configure the application queue table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **App**. Click a number to display the screen.

Figure 155 TR-098: QueueManagement: App: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 81 TR-098: QueueManagement: App: Details

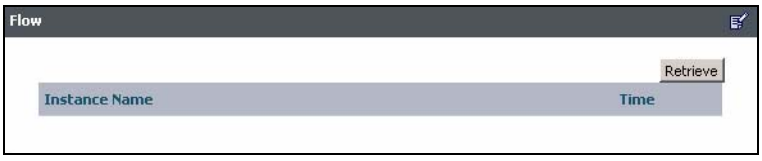
LABEL	DESCRIPTION
AppKey	This field displays the index number of the application table entry.
AppEnable	This field displays whether this entry is activated or not.
AppStatus	This field displays the status of the entry.
ProtocolIdentifier	This field displays the number that identifies the protocol.
AppName	This field displays the descriptive name of the protocol.
AppDefaultForwardingPolicy	This field displays the index number of the forwarding policy entry associated with this entry.
AppDefaultPolicer	This field displays the index number of the policer table entry associated with this entry.
AppDefaultQueue	This field displays the index number of the queue table entry associated with this entry.
AppDefaultDSCPMark	This field displays the default DSCP marking associated with this entry.
AppDefaultEthernetPriorityMark	This field displays the default priority level associated with this entry.

16.10.5 Queue Flow

Use the **Flow** screen to view the queue flow table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Flow**.

Figure 156 TR-098: QueueManagement: Flow

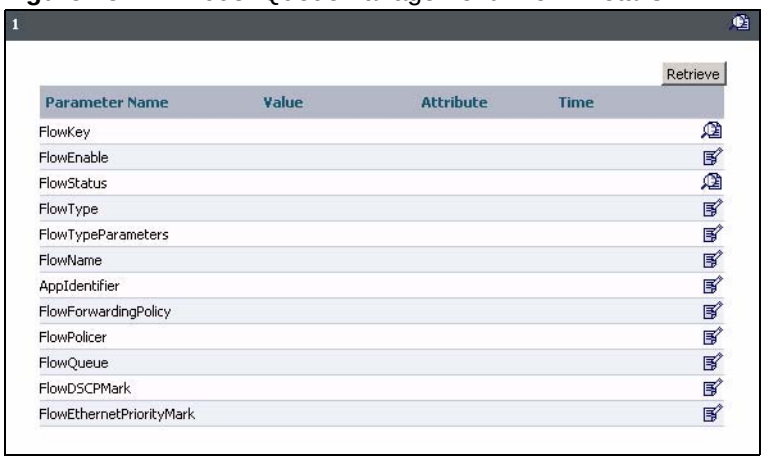


16.10.6 Queue Flow Details

Use the detailed **Flow** screen to view and configure the queue flow table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Flow**. Click a number to display the screen.

Figure 157 TR-098: QueueManagement: Flow: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 82 TR-098: QueueManagement: Flow: Details

LABEL	DESCRIPTION
FlowKey	This field displays the index number of the flow table entry.
FlowEnable	This field displays whether this entry is activated or not.
FlowStatus	This field displays the status of the entry.
FlowType	This field displays the flow type associated with the queue and policer.
FlowTypeParameters	This field displays the value of the flow type.
FlowName	This field displays the descriptive name for this entry.
AppIdentifier	This field displays the index number of the application table entry associated with this entry.
FlowForwardingPolicy	This field displays the index number of the forwarding policy entry associated with this entry.
FlowPolicer	This field displays the index number of the policer table entry associated with this entry.
FlowQueue	This field displays the index number of the queue table entry associated with this entry.
FlowDSCPMark	This field displays the default DSCP marking associated with this entry.
FlowEthernetPriorityMark	This field displays the default priority level associated with this entry.

16.10.7 Queue Policer

Use the **Policer** screen to view the queue policy table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Policer**.

Figure 158 TR-098: QueueManagement: Policer

16.10.8 Queue Policer Details

Use the detailed **Policer** screen to view and configure the queue policy table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Policer**. Click a number to display the screen.

Figure 159 TR-098: QueueManagement: Policer: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 83 TR-098: QueueManagement: Policer: Details

LABEL	DESCRIPTION
PolicerKey	This field displays the index number of the policer table entry.
PolicerEnable	This field displays whether the entry is activated or not.
PolicerStatus	This field displays the current status of the entry.
CommittedRate	This field displays the committed rate (in bits/sec) allowed for this entry.

Table 83 TR-098: QueueManagement: Policer: Details (continued)

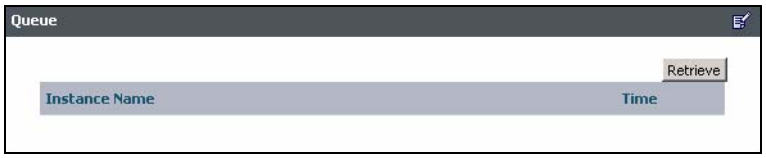
LABEL	DESCRIPTION
CommittedBurstSize	This field displays the committed burst rate (in bytes) for this entry.
ExcessBurstSize	This field displays the excess burst rate (in bytes) for this entry.
PeakRate	This field displays the peak rate (in bits/sec) allowed for this entry.
PeakBurstSize	This field displays the peak burst rate (in bytes) for this entry.
MeterType	This field displays the traffic measurement method to use for this entry.
PossibleMeterTypes	This field displays the comma-separated list of supported traffic measurement types.
ConformingAction	This field displays how the device is to handle conforming traffic.
PartialConformingAction	This field displays how the device is to handle partially conforming traffic.
NonConformingAction	This field displays how the device is to handle non-conforming traffic.
CountedPackets	This field displays the number of packets as a result of the count meter action.
CountedBytes	This field displays the number of bytes as a result of the count meter action.

16.10.9 Queue

Use the **Queue** screen to view the queue table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the **Device List window and click Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Queue**.

Figure 160 TR-098: QueueManagement: Queue



16.10.10 Queue Details

Use the detailed **Queue** screen to view and configure the queue table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Queue**. Click a number to display the screen.

Figure 161 TR-098: QueueManagement: Queue: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 84 TR-098: QueueManagement: Queue: Details

LABEL	DESCRIPTION
QueueKey	This field displays the index number of the queue table entry.
QueueEnable	This field displays whether the entry is activated or not.
QueueStatus	This field displays the current status of the entry.
QueueInterface	This field displays the name of the interface to which the entry is applied.
QueueBufferLength	This field displays the queue buffer size in bytes.
QueueWeight	This field displays the queue weight for weighted queuing methods.
QueuePrecedence	This field displays the priority level of the queue relative to other queues.
REDThreshold	This field displays the threshold for Random Early Discard (RED) algorithm.
REDPercentage	This field displays the percentage for Random Early Discard (RED) algorithm.
DropAlgorithm	This field displays the name of the drop algorithm for this queue in case of network congestion.
SchedulerAlgorithm	This field displays the name of the algorithm used by the scheduler.
ShapingRate	This field displays the shaping rate for the queue.
ShapingBurstSize	This field displays the burst size in bytes for traffic shaping.

16.11 LAN Configuration Security

Use the **LANConfigSecurity** screen to display and configure the password to allow LAN access on the device for auto-configuration settings. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANConfigSecurity**.

Figure 162 TR-098: LANConfigSecurity

16.12 IP Ping Diagnostics

Use the **IPPingDiagnostics** screen to configure the ping test settings on a device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **IPPingDiagnostics**.

Figure 163 TR-098: IPPingDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 85 TR-098: IPPingDiagnostics

LABEL	DESCRIPTION
DiagnosticsState	This field displays the ping test result.
Interface	This field displays the hierarchical name of the interface for ping diagnostics. For example, “InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANPPPConnection.1”. You can enter up to 256 characters for the interface name.
Host	This field displays the IP address or domain name of the host the device is to ping to test the connection.
NumberOfRepetitions	This field displays the number of ping test before displaying the result.
Timeout	This field displays the timeout (in milli-seconds) for a ping test.
DataBlockSize	This field displays the size of the packet to send for each ping test.
DSCP	This field displays the DiffServ Code Point (DSCP) to use for the test packets. The default is 0.

Table 85 TR-098: IPPingDiagnostics (continued)

LABEL	DESCRIPTION
SuccessCount	This field displays the number of ping tests that are successful before the timeout.
FailureCount	This field displays the number of ping tests that failed.
AverageResponseTime	This field displays the average response time (in milli-seconds) of successful ping tests. If there are no successful responses, this field displays 0.
MinimumResponseTime	This field displays the minimum response time (in milli-seconds) of successful ping tests. If there are no successful responses, this field displays 0.
MaximumResponse Time	This field displays the maximum response time (in milli-seconds) of successful ping tests. If there are no successful responses, this field displays 0.

17

LAN Device

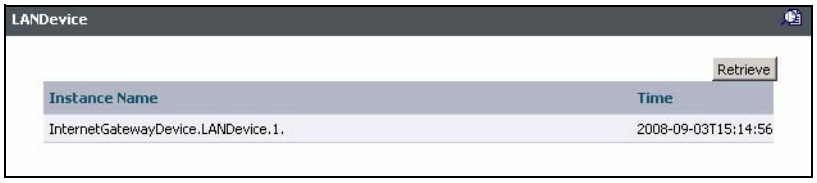
This chapter describes the screens you use to configure and view LAN settings.

17.1 LAN Device Screen

Use the **LANDevice** screens to configure or view the LAN interface settings on the selected device. The number of screens and field labels available vary depending on your device model. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANDevice** to display the screen.

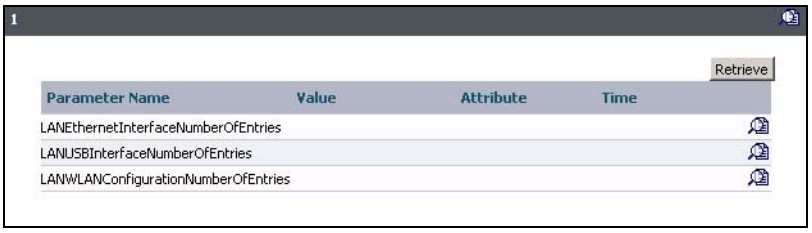
Figure 164 TR-098: LANDevice



17.1.1 Detailed LAN Device Information

Use this screen to view detailed LAN device information. To find this screen, click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANDevice** and a number.

Figure 165 TR-098: LANDevice: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 86 TR-098: LANDevice: Details

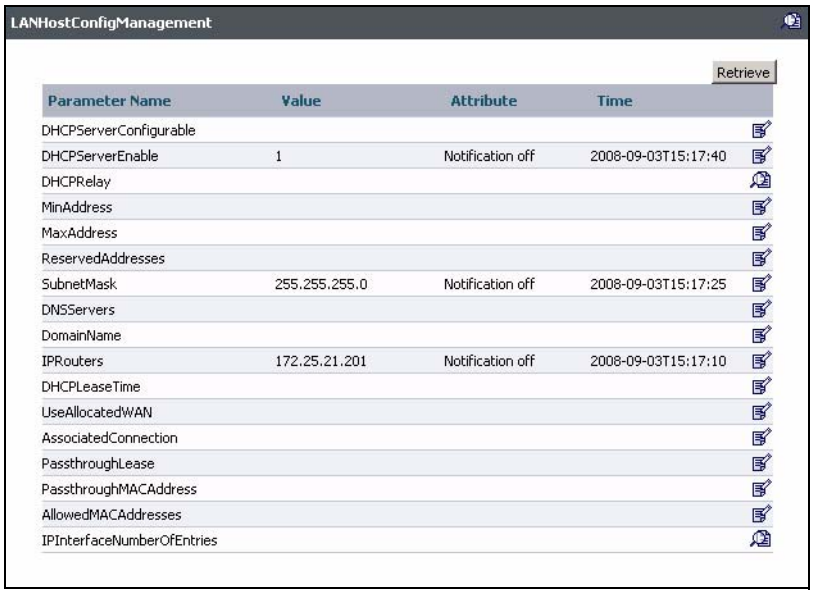
PARAMETER NAME	VALUE
LANEthernetInterfaceNumberOfEntries	This field displays the number of instances on the LAN interface.
LANUSBInterfaceNumberOfEntries	This field displays the number of instances on the USB interface.
LANWLANConfigurationNumberOfEntries	This field displays the number of instances on the WLAN interface.

17.2 LAN Host Configuration Management

Use the **LANHostConfigManagement** screen to view and configure DHCP settings on the LAN interface.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANDevice**. Click a number and **LANHostConfigManagement** to display the screen.

Figure 166 TR-098: LAN Device: LANHostConfigManagement



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 87 TR-098: LAN Device: LANHostConfigManagement

PARAMETER NAME	VALUE
DHCPServerConfigurable	This field displays **1** if Vantage Access can change the default DHCP server setting on the LAN interface. This field displays **0** to have the device use the default DHCP server settings on the LAN. No changes are allowed.
DHCPServerEnable	This field displays **1** to indicate that the DHCP server setting on the LAN interface in enabled. This field displays **0** to indicate that the DHCP server setting on the LAN interface is disabled.
DHCPRelay	This field displays **1** when the device is set to act as a DHCP relay on the LAN. The device will forward DHCP requests from the clients to the actual DHCP server on the LAN. In this case, you must set up a DHCP server. This field displays **0** when DHCP relay is deactivated. In this case, the device acts as a DHCP server.
MinAddress	This field displays the first IP address in the DHCP IP pool the DHCP server assigns to a DHCP client on the LAN.
MaxAddress	This field displays the last IP address in the DHCP IP pool the DHCP server assigns to a DHCP client on the LAN.
ReservedAddresses	This field displays the IP address(es) in the DHCP IP pool that is reserved and not assigned to a DHCP client on the LAN. IP addresses are separated by a comma (,).
SubnetMask	This field displays the subnet mask for the DHCP clients.
DNSServers	This field displays the IP address of the DNS server whose information the device sends to the DHCP clients. DNS server IP addresses are separated by a comma (,).
DomainName	This field displays the domain name the device is to assign to DHCP clients.
IPRouters	This field displays the IP address of the default gateway on the LAN. IP addresses are separated by a comma (,).
DHCPLeaseTime	This field displays the lease time (in seconds) for the assigned IP address to DHCP client(s). This field displays **-1** to indicate that a lease time never times out.
UseAllocatedWAN	This field displays how the device is to assign DHCP client IP address(es). **Normal** means the device is set to assign IP address from the DHCP IP pool configured. **UserAllocatedSubnet** means the device is set to assign IP address from the range of WAN IP addresses provided by your ISP. **Passthrough** means the device is set to assign IP address to the DHCP client whose MAC address is marked for passthrough.
AssociatedConnection	This field is applicable if the **UseAllocatedWAN** field displays **UseAllocatedSubnet** or **Passthrough**. This field displays the complete hierarchical name for the default WAN interface to which this connection is associated.
PassthroughLease	This field displays the lease time (in seconds) to DHCP clients when the WAN IP address is passthrough.
PassthroughMACAddress	This field is applicable if you select **Passthrough** in the **UseAllocatedWAN** field.

Table 87 TR-098: LAN Device: LANHostConfigManagement (continued)

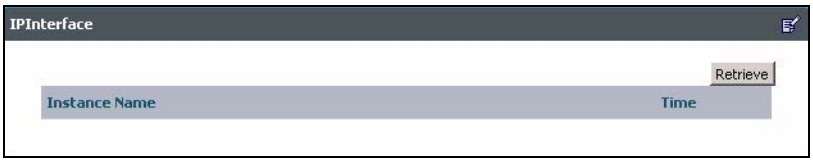
PARAMETER NAME	VALUE
AllowedMACAddresses	This field displays the MAC address(es) allowed to pass through the LAN.
IPInterfaceNumberOfEntries	This field displays the number of IP subnets on the LAN. This field is **1** if IP alias is not supported on the LAN.

17.2.1 IP Interface

The **IPInterface** screen allows you to view IP settings per each subnet on the LAN. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANDevice** > **LANHostConfigManagement**. Click **IPInterface** to display the screen.

Figure 167 TR-098: LAN Device: IPInterface

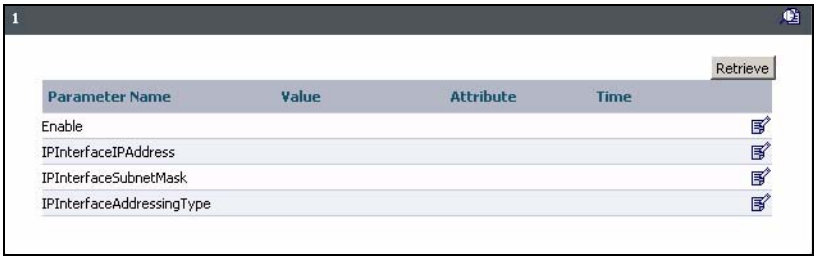


17.2.2 IP Interface Details

Use this screen to view detailed IP interface information.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANHostConfigManagement**.
3. Click **IPInterface** and a number to display the screen.

Figure 168 TR-098: LAN Device: IPInterface: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 88 TR-098: LAN Device: IPInterface: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the LAN interface is enabled. **0** means the LAN interface is disabled and no traffic is allowed through.
IPInterfaceIPAddress	This field displays the LAN IP address of the device in dotted decimal notation, for example, 192.168.1.1.

Table 88 TR-098: LAN Device: IPInterface: Details (continued)

PARAMETER NAME	VALUE
IPInterfaceSubnetMask	This field displays the subnet mask on the LAN. For example, 255.255.255.0.
IPInterfaceAddressingType	This field displays the method to assign IP address on the LAN interface. **DHCP** means the device is set to assign IP address from a DHCP server. **Static** means the device is set to use a fixed IP address configured in the field above. **AutoIP** means the device is set to use the default IP settings on the LAN interface.

17.3 LAN Ethernet Interface

The **LANEthernetInterfaceConfig** screen allows you to view LAN Ethernet settings. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Then click a number and **LANEthernetInterfaceConfig** to display the screen.

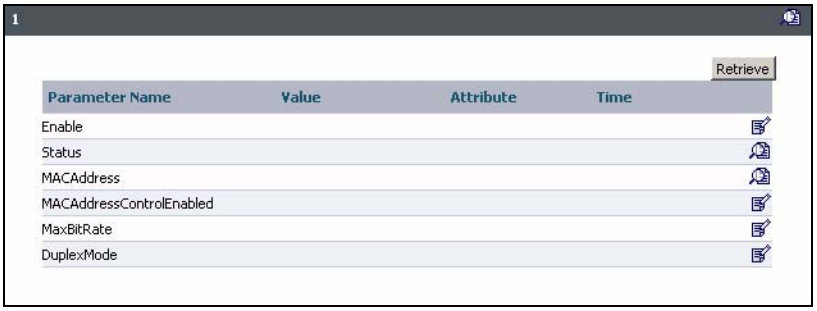
Figure 169 TR-098: LAN Device: LANEthernetInterfaceConfig

17.3.1 LAN Ethernet Interface Details

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANEthernetInterfaceConfig**.
3. Click a number to display the configuration screen for a LAN Ethernet interface.

Use this screen to enable or disable the LAN Ethernet interface, configure the port speed and duplex mode. You can also use this screen to enable or disable static MAC address learning.

Figure 170 TR-098: LAN Device: LANEthernetInterfaceConfig: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 89 TR-098: LAN Device: LANEthernetInterfaceConfig: Details

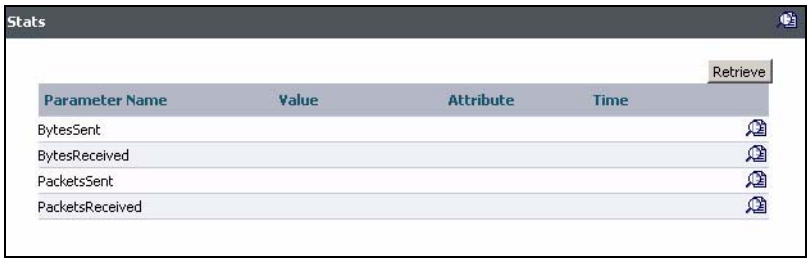
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the LAN Ethernet interface is active. **0** indicates the LAN Ethernet interface is disabled. In this case, no connection is allowed.
Status	This field displays the connection status of the Ethernet interface.
MACAddress	This field displays the MAC address of the Ethernet interface.
MACAddress ControlEnabled	This field displays **1** to indicate that traffic with the specified MAC addresses is allowed on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 17.2 on page 230). This field displays **0** to indicate that MAC address control is disabled. All traffic is allowed through the LAN interface.
MaxBitRate	This field displays the connection speed in megabits per second (Mbps). **Auto** (auto-negotiation) allows the port to negotiate with a peer port automatically to obtain the connection speed that both ends support.
DuplexMode	This field displays the duplex mode for the connection. **Auto** allows the port to negotiate with a peer port automatically to obtain the duplex mode that both ends support.

17.3.2 Ethernet Interface Statistics

The **Stats** screen shows the statistics on the LAN interface.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANEthernetInterfaceConfig**.
3. Click a number and **Stats**.

Figure 171 TR-098: LAN Device: LANEthernetInterfaceConfig: Stats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 90 TR-098: LAN Device: LANEthernetInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the number of transmitted bytes on this interface.
BytesReceived	This field displays the number of received bytes on this interface.

Table 90 TR-098: LAN Device: LANEthernetInterfaceConfig: Stats (continued)

PARAMETER NAME	VALUE
PacketsSent	This field displays the number of transmitted packets on this interface.
PacketsReceived	This field displays the number of received packets on this interface.

17.4 LAN USB Interface

The **LANUSBInterfaceConfig** screen is applicable when your device comes with a USB port. Use this screen to view a summary of the USB interface. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Then click a number and **LANUSBInterfaceConfig** to display the screen.

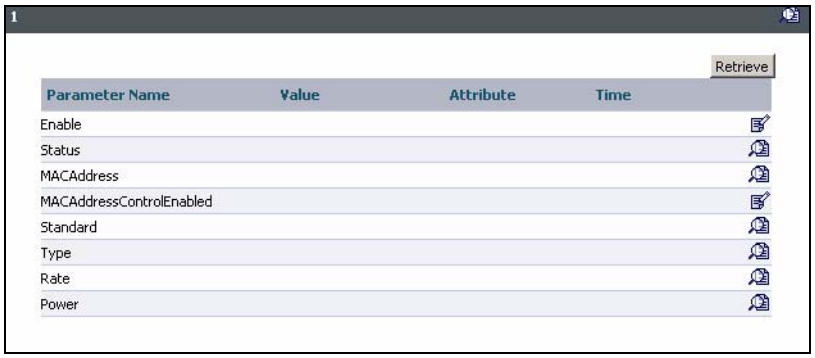
Figure 172 TR-098: LAN Device: LANUSBInterfaceConfig

17.4.1 LAN USB Interface Details

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANUSBInterfaceConfig**.
3. Click a number to display the screen as shown.

Use this screen to activate the USB interface and/or enable MAC address learning control.

Figure 173 TR-098: LAN Device: LANUSBInterfaceConfig: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 91 TR-098: LAN Device: LANUSBInterfaceConfig: Details

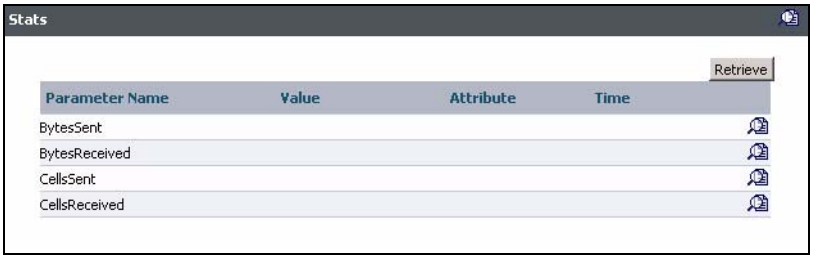
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the USB interface on the LAN is enabled; otherwise, it displays **0**.
Status	This field displays the connection status of the USB interface on the LAN.
MACAddress	This field displays the MAC address of the USB interface on the LAN.
MACAddress ControlEnabled	This field displays **1** to allow traffic with the specified MAC addresses on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 17.2 on page 230). This field displays **0** to indicate that MAC address control is disabled on this port. All traffic is allowed through the USB interface on the LAN.
Standard	This field displays the version of the USB standard supported on the device.
Type	This field displays the type of USB interface on the device.
Rate	This field displays the speed of the USB interface.
Power	This field displays how the USB interface is to obtain power.

17.4.2 USB Interface Statistics

Display the **Stats** screen to view the statistics of the USB interface on the LAN.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice** > **LANUSBInterfaceConfig**, click a number and **Stats** to display the screen as shown.

Figure 174 TR-098: LAN Device: LANUSBInterfaceConfig: Stats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 92 TR-098: LAN Device: LANUSBInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the number of transmitted bytes on this interface.
BytesReceived	This field displays the number of received bytes on this interface.
CellsSent	This field displays the number of transmitted cells on this interface.
CellsReceived	This field displays the number of received cells on this interface.

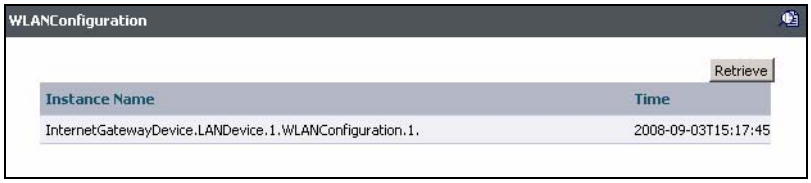
17.5 WLAN Configuration

The settings in the **WLANConfiguration** screen is applicable to a device with built-in wireless capabilities.

Use the **WLANConfiguration** screen to view the number of wireless LAN interfaces on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Click a number and **WLANConfiguration** to display the screen as shown.

Figure 175 TR-098: LAN Device: WLANConfiguration

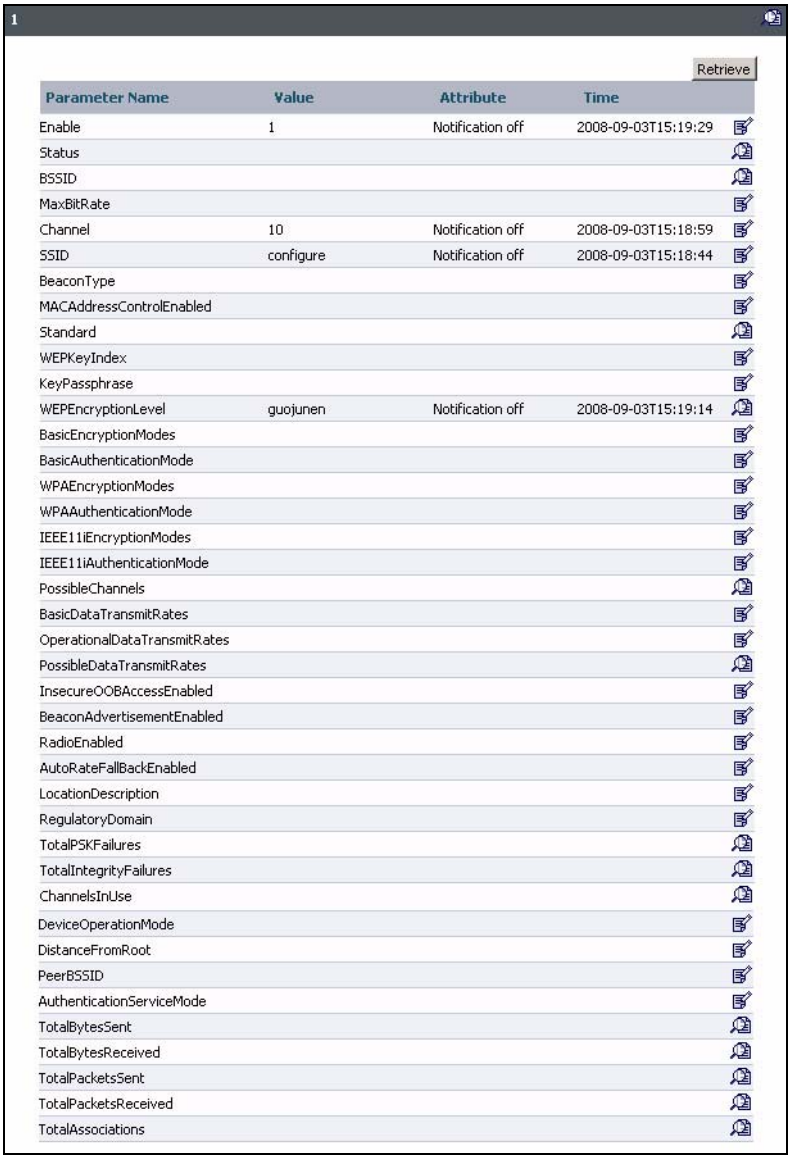


17.5.1 WLAN Configuration Details

The settings in the **WLANConfiguration** screen are applicable to a device with built-in wireless capabilities. Use this configuration screen to view and configure basic wireless LAN settings on the device.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number to display the screen as shown.

Figure 176 TR-098: LAN Device: WLANConfiguration: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 93 TR-098: LAN Device: WLANConfiguration

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the WLAN interface is enabled; otherwise, it displays **0**.
Status	This field displays the connection status of the WLAN interface.
BSSID	This field displays identification (usually the MAC address) of the wireless interface.
MaxBitRate	This field displays the maximum bit rate (in Mbps) allowed on the WLAN interface. “auto” means the device automatically uses the highest transmission rate in the **OperationalDataTransmitRates** field.

Table 93 TR-098: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
Channel	This field displays the wireless channel number (0 to 255) to use for transmission.
SSID	This field displays the name (up to 32 characters) to identify the wireless network.
BeaconType	This field displays the WLAN security mode for wireless transmission. Select **None** to disable wireless security.
MACAddressControlEnabled	This field displays **1** to indicate that traffic with the specified MAC addresses is allowed on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 17.2 on page 230). **0** means the MAC address control feature is disabled. All traffic is allowed through the USB interface on the LAN.
Standard	This field displays the wireless standard in which the device is currently operating.
WEPKeyIndex	This field displays the index number (1 - 4) of the WEP key the device is to use for data encryption.
KeyPassphrase	This field displays the passphrase the device uses to generate the WEP keys.
WEPEncryptionLevel	This field displays the wireless encryption level supported on the device.
BasicEncryptionModes	This field is applicable when you select a basic security option for the **BeaconType** field. **WEPEncryption** means the device is set to use basic WEP encryption for wireless transmission. **None** means WEP encryption is disabled. In this case, traffic sent through the wireless network is not secure.
BasicAuthenticationMode	This field is applicable when you select a basic security option in the **BeaconType** field. **EAPAuthentication** enables user authentication before wireless connection is allowed for the WLAN clients. **None** deactivates this feature. In this case, your wireless network may be accessible by anyone.
WPAEncryptionModes	This field is applicable when you select a WPA security option in the **BeaconType** field. This field displays the encryption method to secure traffic over the wireless network.
WPAAuthenticationMode	This field is applicable when you select a WPA security option in the **BeaconType** field. This field displays the authentication method to control access to your wireless network.
IEEE11iEncryptionModes	This field is applicable when you select an 11i security option in the **BeaconType** field. This field displays the encryption method to secure traffic over the wireless network.
IEEE11iAuthenticationMode	This field is applicable when you select an 11i security option in the **BeaconType** field. This field displays the authentication method to control access to your wireless network.
PossibleChannels	This field displays wireless channels available for your device as defined by the regulatory body.

Table 93 TR-098: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
BasicDataTransmitRates	This field displays the wireless transmission rate (Mbps) for broadcast, multicast and unicast frames on the device. Multiple transmission rates are separated by commas (,). For example, “1,2” means the device is able to send at 1 Mbps or 2 Mbps.
OperationalDataTransmitRates	This field displays the maximum transmission rate (in Mbps) allowed for unicast frames on the device. Multiple transmission rates are separated by commas (,). For example, if the **BasicDataTransmitRates** field is “1,2” and this field is “1,2,5.5,11”, then the device can transmit unicast frames at the maximum rates of 5.5 Mbps or 11 Mbps.
PossibleDataTransmitRates	This field displays the transmission rates for unicast frames WLAN clients are allowed when connected to the device. For example, if this field displays “1,2,5.5”. This means that the device allows a wireless connection of up to 5.5 Mbps even though it is capable of connecting at 11 Mbps.
InsecureOOBAccessEnabled	This field displays **1** to indicate that configuration changes are allowed to send through insecure management methods other than the WAN CPE Management Protocol. **0** disables this feature.
BeaconAdvertisementEnabled	This field displays **1** to indicate that the device is set to send beacons to advertise its presence; otherwise, this field is **0**.
RadioEnabled	This field display **1** to indicate that the wireless transmission is allowed on the device; otherwise, this field displays **0**.
AutoRateFallBackEnabled	This field displays **1** to indicate that the device is set to automatically reduce wireless transmission rates due to noise or contention. **0** deactivates this feature.
LocationDescription	This field displays the location of the device for identification purposes.
RegulatoryDomain	This field displays the name of the regulatory body in your geographical area. The first two characters are the country code as defined in ISO/IEC 3166-1. For the third character, “ “ means all environment, “I” means inside and “O” means outside.
TotalPSKFailures	This field is applicable for WPA and 802.11i authentication methods. This field displays the number of times pre-shared key authentication has failed.
TotalIntegrityFailures	This field is applicable for WPA and 802.11i authentication methods. This field displays the number of times MICHEAL integrity check has failed.
ChannelsInUse	This field displays the channel number(s) that is currently used on the device for wireless transmission.
DeviceOperationMode	This field displays the wireless operation mode for the device.
DistanceFromRoot	This field displays the number of hops between this device and the wireless bridge/repeater.
PeerBSSID	This field displays the MAC address of the peer wireless bridge/repeater.
AuthenticationServiceMode	If user authentication is enabled, this field displays the location of the user database the device is to check.
TotalBytesSent	This field displays the number of transmitted bytes on this interface.
TotalBytesReceived	This field displays the number of received bytes on this interface.

Table 93 TR-098: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
TotalPacketsSent	This field displays the number of transmitted packets on this interface.
TotalPacketsReceived	This field displays the number of received packets on this interface.
TotalAssociations	This field displays the number of wireless clients associated to this device.

17.6 WLAN Association List

The **AssociatedDevice** screen displays a list of WLAN devices that are currently connected to the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **AssociatedDevice** to display the screen as shown.

Figure 177 TR-098: LAN Device: WLANConfiguration:AssociatedDevice

17.6.1 WLAN Association List Details

Display the **AssociatedDevice** screen to view information on a wireless client currently connected to the device.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **AssociatedDevice**.
4. Click a number to display the screen as shown.

Figure 178 TR-098: LAN Device: WLANConfiguration: AssociatedDevice: Details

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 94 TR-098: LAN Device: WLANConfiguration: AssociatedDevice: Details

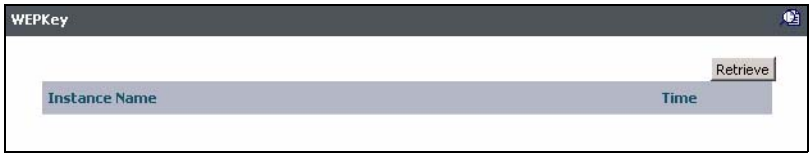
LABEL	DESCRIPTION
AssociatedDeviceMACAddress	This field displays the MAC address of an associated device.
AssociatedDeviceIPAddress	This field displays the IP address or domain name of an associated device.
AssociatedDeviceAuthenticationState	This field displays whether the associated device is authenticated (**Enable**) or not (**Disable**).
LastRequestedUnicastCipher	This field is applicable for 802.11i authentication methods. This field displays the last unicast cipher used for a device with the specified MAC address.
LastRequestedMulticastCipher	This field is applicable for 802.11i authentication methods. This field displays the last multicast cipher used for a device with the specified MAC address.
LastPMKId	This field is applicable for 802.11i authentication methods. This field displays the last pairwise master key used for a device with the specified MAC address.

17.7 WEP Key

Use the **WEPKey** screen to view the WEP key object information. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **WEPKey** to display the screen as shown.

Figure 179 TR-098: LAN Device: WLANConfiguration: WEPKey



17.7.1 WEP Key Details

Use this configuration screen to view and set up WEP encryption keys for secure wireless communication on the device.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **WEPKey**.
4. Click a number to display the screen as shown.

Figure 180 TR-098: LAN Device: WLANConfiguration: WEPKey: Details

The **WEPKey** field displays the WEP key content. Depending on the encryption level in the **WEPEncryptionLevel** field in the **WLANConfiguration** screen, the key length varies.

For 40-bit encryption level, this field displays 10 hexadecimal characters (“0-9”, “a-z”, “A-F”). For 104-bit encryption level, this field displays 26 hexadecimal characters (“0-9”, “a-z”, “A-F”). The WEP key content is not sent when requested. An empty string is returned.

Refer to Section 11.2.4 on page 132 for other field descriptions.

17.8 Pre-shared Key

Use the **PreSharedKey** screen to view the pre-shared key information. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **PreSharedKey** to display the screen as shown.

Figure 181 TR-098: LAN Device: WLANConfiguration: PreSharedKey

17.8.1 Pre-shared Key Details

Use the detailed **PreSharedKey** screen to configure the passphrase the device uses to generate the pre-shared key and/or WEP keys automatically.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **PreSharedKey**.
4. Click a number to display the screen as shown.

Figure 182 TR-098: LAN Device: WLANConfiguration: PreSharedKey: Details

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 95 TR-098: LAN Device: WLANConfiguration: PreSharedKey: Details

PARAMETER NAME	VALUE
PreSharedKey	This field displays a pre-shared key for WPA security.
KeyPassphrase	This field displays the passphrase the device uses to generate a pre-shared key or WEP key based.
AssociatedDeviceMACAddress	This field displays the MAC address of a wireless client associated to this key.

17.9 LAN Hosts

In the **Hosts** screen, you can view the number of LAN hosts that are assigned a dynamic or static IP address by the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Click a number and **Hosts** to display the screen.

Figure 183 TR-098: LAN Device: Hosts

17.9.1 LAN Host Table

Display the **Host** screen to view the host table name. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **Hosts**.
3. Click **Host** to display the screen.

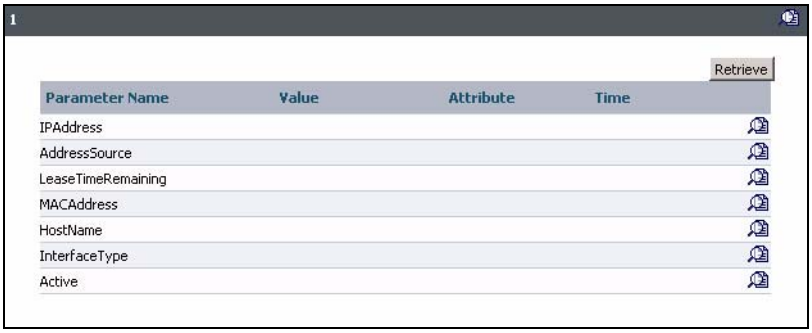
Figure 184 TR-098: LAN Device: Hosts: Host

17.9.2 LAN Host Table Details

Display the detailed Host screen to view or configure DHCP host settings (such as IP address, lease time, etc.).

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **Hosts**.
3. Click **Host** and a number to display the screen.

Figure 185 TR-098: LAN Device: Hosts: Host: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 96 TR-098: LAN Device: Hosts: Host: Details

PARAMETER NAME	VALUE
IPAddress	This field displays the IP address assigned to the LAN host.
AddressSource	This field indicates whether the LAN host obtains the IP address statically (**Static**), dynamically from the device (**DHCP**) or through automatic assignment (**Auto**).
LeaseTimeRemaining	If the host IP address is assigned through DHCP, this field displays the lease time remaining (in seconds). A value of -1 means that the lease never times out. This field displays zero if the IP address assignment is not through DHCP.
MACAddress	This field displays the MAC address of the LAN host.
HostName	This field displays the name of the LAN host.
InterfaceType	This field displays the name of the interface the LAN host uses to connect to the device.
Active	This field is **Enabled** to indicate that the LAN host is currently present in the network. Otherwise, this field is **Disable**.

18

WAN Device

This chapter describes the screens you use to configure and view WAN settings.

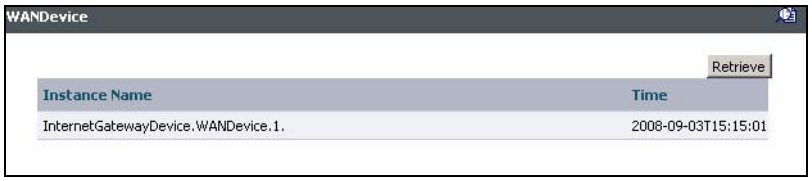
18.1 WAN Device Screen Overview

Use the WAN Device screens to configure or view the WAN interface settings on the selected device. The number of screens and field labels available vary depending on your device model.

The **WANDevice** screen displays the number of connected WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice.**

Figure 186 TR-098: WANDevice



18.1.1 WAN Device Details

To view the number of WAN connections, select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice and then click an index.**

The value for the **WANConnectionNumberOfEntries** displays the number of connections on the WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions.

Figure 187 TR-098: WANDevice: Details

18.2 WAN Common Interface Configuration

You can view basic common connection status in the **WANCommonInterfaceConfig** screen.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANCommonInterfaceConfig** to display the screen.

Figure 188 TR-098: WAN Device: WANCommonInterfaceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 97 TR-098: WAN Device: WANCommonInterfaceConfig

PARAMETER NAME	VALUE
EnabledForInternet	This field displays **1** to indicate that the WAN interface is enabled for Internet access; otherwise, the field displays **0**.
WANAccessType	This field displays the type of connection for Internet access on the WAN interface.
Layer1UpstreamMaxBitRate	This field displays the maximum upstream transmission rate in bits per second.
Layer1DownstreamMaxBitRate	This field displays the maximum download transmission rate in bits per second.
PhysicalLinkStatus	This field displays the link status. Possible states are **Up**, **Down**, **Initializing** and **Unavailable**.
WANAccessProvider	This field displays the name of the ISP providing the Internet access service.
TotalBytesSent	This field displays the total number of bytes transmitted.
TotalBytesReceived	This field displays the total number of bytes received.
TotalPacketsSent	This field displays the total number of packets transmitted.
TotalPacketsReceived	This field displays the total number of packets received.
MaximumActiveConnections	This field displays the maximum number of connections allowed on the device for Internet access.
NumberOfActiveConnections	This field displays the number of active connections on the device for Internet access.

18.2.1 Connection

Use the **Connection** screen to view the Internet connection instance. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANCommonInterfaceConfig**.
3. Click **Connection** to display the screen.

Figure 189 TR-098: WAN Device: WANCommonInterfaceConfig: Connection

18.2.2 Connection Setup

Use the **Connection** screen to configure general connection settings.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANCommonInterfaceConfig**.
3. Click **Connection** and a number to display the screen.

Figure 190 TR-098: WAN Device: WANCommonInterfaceConfig: Connection: Setup

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 98 TR-098: WAN Device: WANCommonInterfaceConfig: Connection: Setup

PARAMETER NAME	VALUE
ActiveConnectionDeviceContainer	This field displays the hierarchical name of the WAN interface associated with the connection. For example, “InternetGatewayDevice.WANDevice.1.-WANConnectionDevice.1.WANPPPConnection.1”
ActiveConnectionServiceID	This field displays the hierarchical name of the interface object for this connection.

18.3 WAN DSL Interface Configuration

Use the **WANDSLInterfaceConfig** to configure the DSL connection for Internet access. DSL connection setup is independent of other WAN interface parameter settings.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANDSLInterfaceConfig** to display the screen.

Figure 191 TR-098: WAN Device: WANDSLInterfaceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 99 TR-098: WAN Device: WANDSLInterfaceConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the link is active; otherwise, it displays **0**.
Status	This field displays the link status.
ModulationType	This field displays the modulation method used on the link.
LineEncoding	This field displays the line encoding method used to establish a connection to the ISP.
DataPath	This field displays whether the link uses fast (lower latency) or interleave (lower error rate) data path.
InterleaveDepth	This field is applicable when the **DataPath** field shows **Interleave**. This field displays the interleaved depth.
LineNumber	This field displays the number of the line pair used for the connection. For example, 1 means the inner most pair.

Table 99 TR-098: WAN Device: WANDSLInterfaceConfig (continued)

PARAMETER NAME	VALUE
UpstreamCurrRate	This field displays the current payload bandwidth (in kbps) of the upstream DSL channel.
DownstreamCurrRate	This field displays the current payload bandwidth (in kbps) of the downstream DSL channel.
UpstreamMaxRate	This field displays the attainable bandwidth (in kbps) for the upstream DSL channel.
DownstreamMaxRate	This field displays the attainable bandwidth (in kbps) for the downstream DSL channel.
UpstreamNoiseMargin	This field displays the current upstream Noise-to-Signal ratio (in 0.1 dB) for the upstream DSL channel.
DownstreamNoiseMargin	This field displays the current upstream Noise-to-Signal ratio (in 0.1 dB) for the downstream DSL channel.
UpstreamAttenuation	This field displays the current upstream signal loss (in 0.1 dB).
DownstreamAttenuation	This field displays the current downstream signal loss (in 0.1 dB).
UpstreamPower	This field displays the output power (in 0.1dBmV).
DownstreamPower	This field displays the received power (in 0.1dBmV).
ATURVendor	This field displays the ATU-R vendor identifier.
ATURCountry	This field displays the ATU-R country code.
ATURANSIStd	This field displays the ATU-R T1.413 version number.
ATURANSIRev	This field displays the ATU-R vendor revision number.
ATUCVendor	This field displays the ATU-C vendor identifier.
ATUCCountry	This field displays the ATU-C country code.
ATUCANSIStd	This field displays the ATU-C T1.413 version number.
ATUCANSIRev	This field displays the ATU-C vendor revision number.
TotalStart	This field displays the number of seconds that elapsed since statistics information collection started.
ShowtimeStart	This field displays the number of seconds since the beginning of the period used for collecting first ShowTime statistics.
LastShowtimeStart	This field displays the number of seconds since the beginning of the second most recent period used for collecting the ShowTime statistics.
CurrentDayStart	This field displays the number of seconds since the beginning of the period used for collecting CurrentDayStart statistics.
QuarterHourStart	This field displays the number of seconds since the beginning of the period used for collecting QuarterHour statistics.

18.3.1 WAN DSL Line Statistics

Use the **Stats** screen to view the DSL connection statistics instance. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLInterfaceConfig**.
3. Click **Stats**.

18.3.2 WAN DSL Line Statistics Details

You can view the line statistics in the **Stats** screens. The following statistics screens are available. Field labels are the same in all the screens.

- **Total**: This screen displays the statistics with the totals.
- **Showtime**: This screen displays the statistics since the most recent DSL Showtime.
- **LastShowtime**: This screen displays the statistics since the second most recent DSL Showtime.
- **CurrentDay**: This screen displays the statistics accumulated during the current day.
- **QuaterHour**: This screen displays the statistics accumulated during the current 15 minutes.

Follow the steps below to display a statistics screen.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLInterfaceConfig**.
3. **Click Stats and click on the type of statistics you want to see.**

Figure 192 TR-098: WAN Device: WANDSLInterfaceConfig: Stats (Total)

The following table describes the labels in this screen.Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 100 TR-098: WAN Device: WANDSLInterfaceConfig: Stats (Total)

PARAMETER NAME	VALUE
ReceiveBlocks	This field displays the number of blocks received.
TransmitBlocks	This field displays the number of blocks sent.
CellDelin	This field displays the number of cell-delineation errors.
LinkRetrain	This field displays the number to link retrain errors.
InitErrors	This field displays the number of initialization errors.
InitTimeouts	This field displays the number of initialization timeout errors.
LossOfFraming	This field displays the number of Loss Of Framing errors.

Table 100 TR-098: WAN Device: WANDSLInterfaceConfig: Stats (Total) (continued)

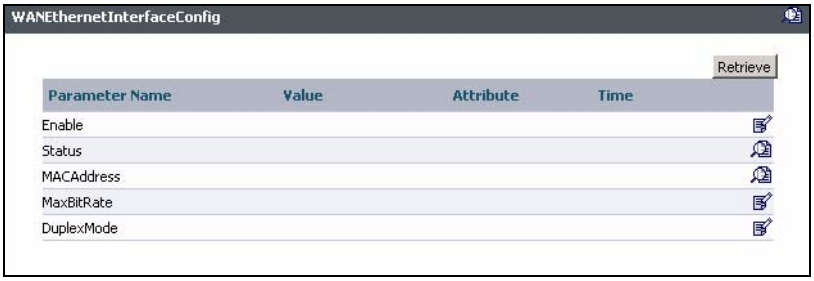
PARAMETER NAME	VALUE
ErroredSecs	This field displays the number of Errored Seconds.
SeverelyErroredSecs	This field displays the number of Severely Errored Seconds.
FECErrors	This field displays the number of FEC errors.
ATUCFECErrors	This field displays the number of FEC errors detected by the ATU-C.
HECErrors	This field displays the number of HEC errors.
ATUCHECErrors	This field displays the number of HEC errors detected by the ATU-C.
CRCErrors	This field displays the number of CRC errors.
ATUCCRCErrors	This field displays the number of CRC errors detected by the ATU-C.

18.4 WAN Ethernet Interface Configuration

You can set the Ethernet settings on the WAN interface in the **WANEthernetInterfaceConfig** screen.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANEthernetInterfaceConfig to display the screen.**

Figure 193 TR-098: WAN Device: WANEthernetInterfaceConfig



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 101 TR-098: WAN Device: WANEthernetInterfaceConfig

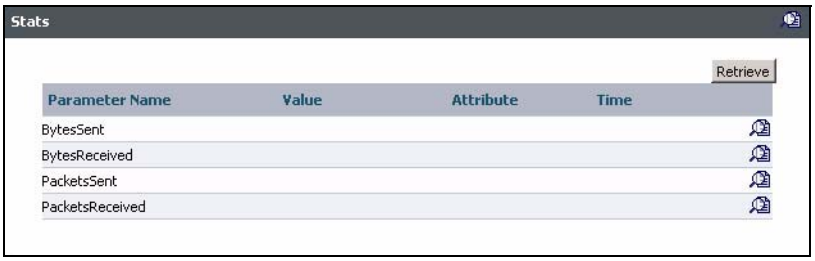
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this interface is active; otherwise, it displays **0**.
Status	This field displays the status of this interface.
MACAddress	This field displays the MAC address of the interface.
MaxBitRate	This field displays the maximum link speed (**10**, **100** or **Auto**) on the interface.
DuplexMode	This field displays the duplex mode (**Half**, **Full** or **Auto**) for the interface.

18.4.1 WAN Ethernet Statistics

View the statistics for the WAN interface in the **Stats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number **WANEthernetInterfaceConfig**.
3. Click **Stats** to display the statistics screen.

Figure 194 TR-098: WAN Device: WANEthernetInterfaceConfig: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 102 TR-098: WAN Device: WANEthernetInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
BytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
PacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
PacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

18.5 WAN DSL Connection Management

The **WANDSLConnectionManagement** screen displays the number of WAN connection services on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANDSLConnectionManagement** to display the screen.

Figure 195 TR-098: WAN Device: WANDSLConnectionManagement

18.6 WAN DSL Connection Service Information

You can view a list of connection service instances in the **ConnectionService** screen.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLConnectionManagement**.
3. Click **ConnectionService** to display the screen.

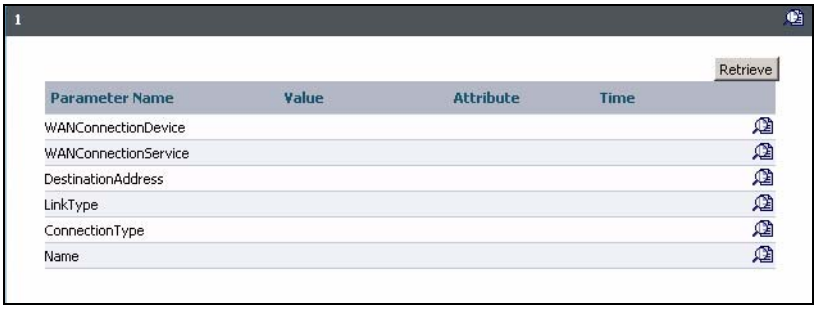
Figure 196 TR-098: WAN Device: ConnectionService

18.6.1 WAN DSL Connection Service Setup

You can view and configure WAN DSL connection service settings in the **ConnectionService** screen.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLConnectionManagement**.
3. Click **ConnectionService** and a number to display the screen.

Figure 197 TR-098: WAN Device: ConnectionService: Setup



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 103 TR-098: WAN Device: ConnectionService: Setup

PARAMETER NAME	VALUE
WANConnectionDevice	This field displays the hierarchical name of the WAN connection device object associated with the connection. For example, “InternetGatewayDevice.WANDevice.1.WANConnectionDevice.2”
WANConnectionService	This field displays the hierarchical name of the WAN connection device object associated with the connection service. For example, “InternetGatewayDevice.WANDevice.1.WANConnectionDevice.2.WANPPPConnection.1”.

Table 103 TR-098: WAN Device: ConnectionService: Setup (continued)

PARAMETER NAME	VALUE
DestinationAddress	This field shows the destination address of the connection. The address displayed varies depending on the connection type. This field displays VCI/VPI for a PVC connection. This field displays an ATM connection name or ATM address for an SVC connection.
LinkType	This field displays the type of the link.
ConnectionType	This field displays the name of the connection type.
Name	This field displays the descriptive name for this connection.

18.7 WAN DSL Diagnostics

You can view the DSL connection diagnostics data in the **WANDSLDiagnostics** screen.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANDSLDiagnostics** to display the screen as shown.

Figure 198 TR-098: WAN Device: WANDSLDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 104 TR-098: WAN Device: WANDSLDiagnostics

PARAMETER NAME	VALUE
LoopDiagnosticsState	This field displays the availability of the link diagnostic test result. **Requested** indicates a test is to be initialized.
ACTPSDds	This field displays the actual power spectral density for the downstream traffic.
ACTPSDus	This field displays the actual power spectral density for the upstream traffic.
ACTATPds	This field displays the actual aggregate transmitter power for the downstream traffic.
ACTATPus	This field displays the actual aggregate transmitter power for the upstream traffic.
HLINSCds	This field displays the linear representation scale for the downstream traffic.
HLINpsds	This field displays the linear channel characteristics per subcarrier for the upstream traffic.

Table 104 TR-098: WAN Device: WANDSLDiagnostics (continued)

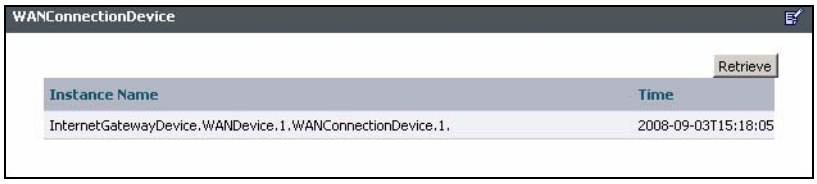
PARAMETER NAME	VALUE
QLNpsds	This field displays the quiet line noise per subcarrier for the downstream traffic in comma-separated list of numbers. Maximum list of numbers is 256 for an ADSL/ADSL2 connection and 512 for an ADSL2+ connection.
SNRpsds	This field displays the Signal-to-Noise ratio per subcarrier for the downstream traffic.
BITSpsds	This field displays the bit allocation per subcarrier for the downstream traffic.
GAINSpsds	This field displays the gain allocation per subcarrier for the downstream traffic.

18.8 WAN Connection Device

For DSL connections, you can view the connection instances associated to an ATM VC in the **WANConnectionDevice** screen.

Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANConnectionDevice** to display the screen as shown.

Figure 199 TR-098: WAN Device: WANConnectionDevice



18.9 WAN Connection Device Details

You can view the number of connection instances associated to WAN connection device in the detailed **WANConnectionDevice** screen.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click on an index to display the screen as shown.

Figure 200 TR-098: WAN Device: WANConnectionDevice: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 105 TR-098: WAN Device: WANConnectionDevice: Details

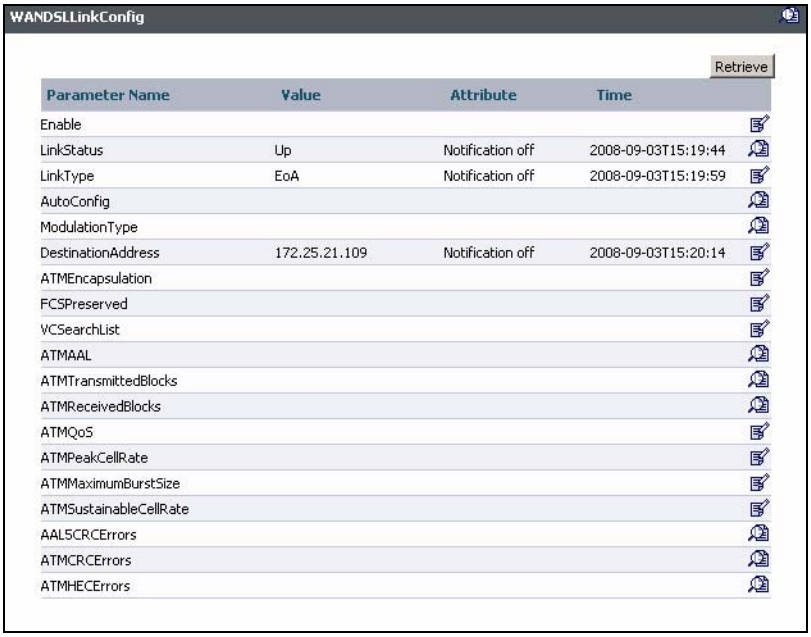
PARAMETER NAME	VALUE
WANIPConnectionNumberOfEntries	This field displays the number of WANIPConnection entries associated to the WANConnectionDevice.
WANPPPConnectionNumberOfEntries	This field displays the number of WANPPPConnection entries associated to the WANConnectionDevice.

18.9.1 WAN DSL Link Configuration

Use the **WANDSLLinkConfig** screen to set the ATM layer properties for the physical DSL connection.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Cick a number and **WANDSLLinkConfig** to display the screen as shown.

Figure 201 TR-098: WAN Device: WANDSLLinkConfig



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 106 TR-098: WAN Device: WANDSLLinkConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the DSL link is active; otherwise, this field displays **0**.
LinkStatus	This field displays the link status (**Up**, **Down**, **Initializing** or **Unavailable**).

Table 106 TR-098: WAN Device: WANDSLLinkConfig (continued)

PARAMETER NAME	VALUE
LinkType	This field displays the type for this DSL link. **EoA** sets the device to use the bridged Ethernet over ATM (RFC2684) link type. **IPoA** sets the device to use the routed IP over ATM (RFC2684) link type. **PPPoA** sets the device to use the PPP over ATM (RFC2364) link type. **PPPoE** sets the device to use the PPP over Ethernet on bridged Ethernet over ATM (RFC2516, RFC2684) link type. **CIP** sets the device to use the Classical IP over ATM (RFC1577) link type. **Unconfigured** means an unknown link type.
AutoConfig	This field displays whether the auto-configuration feature is enabled or disabled for this DSL link.
ModulationType	This field displays the type of modulation used on the interface associated to this DSL link.
DestinationAddress	This field displays the destination address for the DSL link. The type of address you enter varies depending on the connection type. This field displays the VCI/VPI for a PVC connection. This field displays an ATM connection name or ATM address for an SVC connection.
ATMEncapsulation	This field displays the encapsulation (**LLC** or **VCMUX**) to use for this DSL link.
FCSPreserved	This field displays **1** to include a checksum in the ATM payload for error correction. **0** means the checksum is not included in the ATM payload. No error correction is available.
VCSearchList	This field displays the VCI/VPI number pairs (separated by a comma) the link uses to establish a connection if the destination address specified cannot be reached.
ATMAAL	This field displays the ATM Adaptation Layer (AAL) the link uses.
ATMTransmittedBlocks	This field displays the number of ATM blocks transmitted successfully.
ATMReceivedBlocks	This field displays the number of ATM blocks received successfully.
ATMQoS	Select the ATM Quality of Service (QoS) method to use on this link.
ATMPeakCellRate	This field displays the peak cell rate (between 0 and 4294967295) for the upstream traffic in cells per second.
ATMMaximumBurstSize	This field displays the maximum burst rate (between 0 and 4294967295) for the upstream traffic in cells.
ATMSustainableCellRate	This field displays the sustainable cell rate (between 0 and 4294967295) for the upstream traffic in cells per second. This value is used for traffic shaping.
AAL5CRCErrors	This field displays the number of AAL5 layer cyclic redundancy check errors.
ATMCRCErrors	This field displays the number of ATM layer cyclic redundancy check errors.
ATMHECErrors	This field displays the number of Header Error Check related errors at the ATM layer.

18.10 WAN ATM F5 Loopback Diagnostics

Use the **WANATMF5LoopbackDiagnostics** screen to view loopback diagnostic (ping) test results and to configure timeout settings for the ping test on the ATM layer.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANATMF5LoopbackDiagnostics** to display the screen as shown.

Figure 202 TR-098: WAN Device: WANATMF5LoopbackDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 107 TR-098: WAN Device: WANATMF5LoopbackDiagnostics

PARAMETER NAME	VALUE
DiagnosticsState	This field displays the availability of the ping test result. **Requested** means a test is to be initiated.
NumberOfRepetitions	This field displays the number of ping tests (between 1 and 4294967295) to perform before displaying the test results.
Timeout	This field displays the timeout (between 1 and 4294967295 milliseconds) for the ping test.
SuccessCount	This field displays the number of pings that received a successful response within the timeout in the most recent ping test.
FailureCount	This field displays the number of pings that failed to receive a successful response within the timeout in the most recent ping test.
AverageResponseTime	This field displays the average response time (in milliseconds) of all pings that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.
MinimumResponseTime	This field displays the minimum response time (in milliseconds) of the ping that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.
MaximumResponseTime	This field displays the maximum response time (in milliseconds) of the ping that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.

18.11 WAN Ethernet Link Configuration

The **WANEthernetLinkConfig** screen displays the Ethernet link status (**Up**, **Down** or **Unavailable**) in the **EthernetLinkStatus** field. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANEthernetLinkConfig** to display the screen as shown.

Figure 203 TR-098: WAN Device: WANEthernetLinkConfig

18.12 WAN POTS Link Configuration

You can view the WAN POTS connection status in the **WANPOTSLinkConfig** screen. The POST connection is used for dialing to the ISP for Internet access.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPOTSLinkConfig** to display the screen as shown.

Figure 204 TR-098: WAN Device: WANPOTSLinkConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 108 TR-098: WAN Device: WANPOTSLinkConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the POTS link is active; otherwise it displays **0**.
LinkStatus	This field displays the link status (**Up**, **Down**, **Dialing**, **Connecting** or **Unavailable**).
ISPPhoneNumber	This field displays the phone number (up to 64 digits in countrycode-areacode-phone number format) to dial to connect to the ISP. For example, +86-10-62618501. Multiple phone numbers are separated with a colon (:).
ISPInfo	This field displays a descriptive name (up to 64 characters) to identify this ISP.
LinkType	The default link type is **PPP_Dialup**.
NumberOfRetries	This field displays the number of times (between 0 and 4294967295) the CPE device is to re-dial for Internet connection.
DelayBetweenRetries	This field displays the time (in milliseconds) the CPE device is to wait before attempting to connect to the ISP again.
Fclass	This field indicates the transmission functions the CPE device is capable of. 0:data 1, 2, 2.0: fax 8: voice 80: DSVD
DataModulationSupported	This field displays the modulation method(s) supported for data transfer.
DataProtocol	This field displays the protocol(s) supported for data transfer.
DataCompression	This field displays the compression method used for data transfer.
PlusVTRCommandSupported	This field indicates whether full-duplex mode is activated on the link or not.

18.13 WAN IP Connection

You can view the IP settings for the WAN connection in the **WANIPConnection** screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection** to display the screen as shown.

Figure 205 TR-098: WAN Device: WANIPConnection

18.13.1 WAN IP Connection Details

You can configure and view basic IP settings for the WAN IP connection in the detailed **WANIPConnection** screen.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number to display the screen as shown.

Figure 206 TR-098: WAN Device: WANIPConnection: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 109 TR-098: WAN Device: WANIPConnection: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this link is active; otherwise this field displays **0**.
ConnectionStatus	This field displays the link status (**Unconfigured**, **Connecting**, **Connected**, **PendingDisconnect**, **Disconnecting**, **Disconnected**).
PossibleConnectionTypes	This field displays the connection type(s) this link supports.
ConnectionType	This field displays the connection type for this link.
Name	This field displays a descriptive name (up to 256 characters) for this link.

Table 109 TR-098: WAN Device: WANIPConnection: Details (continued)

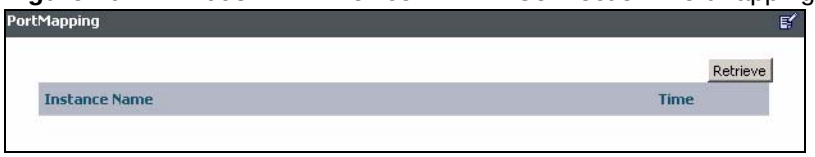
PARAMETER NAME	VALUE
Uptime	This field displays the number of seconds the link has been up.
LastConnectionError	This field displays the cause for the last failed connection attempt.
AutoDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) the device is to wait before disconnecting the link.
IdleDisconnectTime	This field displays the inactivity timeout in seconds (between 0 and 4294967295) for a link. When the time is reached without any network activity through the link, the device automatically disconnect the link.
WarnDisconnectDelay	This field displays the number of seconds (between 0 and 4294967295) before the device disconnects the link.
RSIPAvailable	This field displays whether the Realm-specific IP (RSIP) feature is supported on the device.
NATEnabled	This field displays **1** to indicate that the NAT (Network Address Translation) feature is enabled for this link; otherwise the field displays **0**.
AddressingType	This field displays **DHCP** to set the device to obtain a dynamic IP address from the ISP for this link on the WAN. This field displays **Static** to set the link to use a fixed WAN IP address. Then configure the fields below.
ExternalIPAddress	This field is applicable when you select **Static** in the **AddressingType** field.
SubnetMask	This field is applicable when you select **Static** in the **AddressingType** field.
DefaultGateway	This field is applicable when you select **Static** in the **AddressingType** field.
DNSEnabled	This field displays whether is the device to resolve domain names through this link.
DNSOverrideAllowed	This field displays **1** when a non-empty DNS address is to be replaced by a DNS entry received on the WAN; otherwise, this field is **0**.
DNSServers	This field displays the IP address(es) of the DNS server(s). Multiple IP addresses are separated by a comma.
MaxMTUSize	This field displays the maximum size (between 1 and 1540) for the Ethernet frames allowed on this link.
MACAddress	This field is applicable when you select **Enable** in the **MACAddressOverride** field. This field displays the MAC address on this link.
MACAddressOverride	This field displays **1** to change the MAC address of this interface in the **MACAddress** field. This field is **0** if you do not allow MAC address modification.
ConnectionTrigger	This field displays how the device will establish a connection for Internet access. Choices are **AlwaysOn**, **OnDemand** and **Manual**.
RouteProtocolRx	This field displays the routing protocol (**RIP1**, **RIP2** or **OSPF**) the link is to use. **Off** means the routing feature is disabled.
ShapingRate	This field displays the rate (in bits per second) the device shapes the outgoing traffic to.
ShapingBurstSize	This field displays the burst size (in bytes) for traffic shaping.
PortMappingNumberOfEntries	This field displays the number of port mappings on this link.

18.13.2 Port Mapping Table

Use the **PortMapping** screen to view the port mapping instance for the WAN IP connection. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number and **PortMapping** to display the screen as shown.

Figure 207 TR-098: WAN Device: WANIPConnection: PortMapping

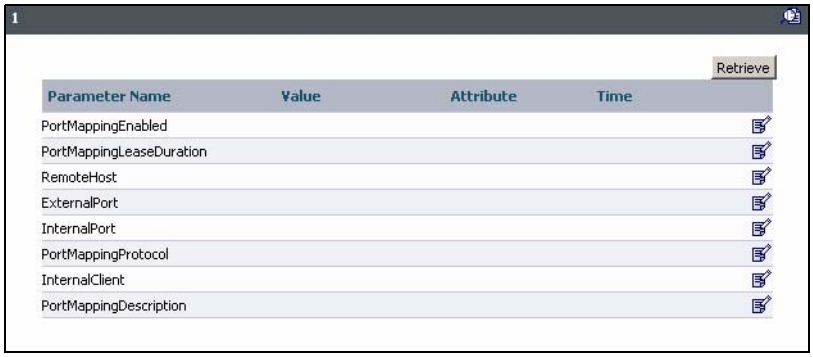


18.13.3 Port Mapping Table Details

Use the detailed **PortMapping** screen to configure the port mapping settings for the WAN IP connection.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number and **PortMapping**.
5. Click a number to display the screen as shown.

Figure 208 TR-098: WAN Device: WANIPConnection: PortMapping: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 110 TR-098: WAN Device: WANIPConnection: PortMapping: Details

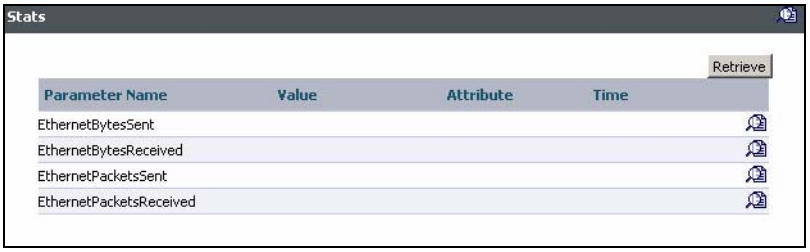
PARAMETER NAME	VALUE
PortMappingEnabled	This field displays **1** to indicate that the port mapping entry on this link is enabled; otherwise this field displays **0**.
PortMappingLeaseDuration	This field displays the time (between 1 to 4294967295 seconds) the device stores the port mapping entry. After this, the entry is removed from the port mapping table. 0 means that a port mapping entry is static and cannot be removed from the port mapping table.
RemoteHost	This field displays the IP address of the remote host device. If this field is blank, it indicates a wildcard which the device must support. In this case, when a packet is sent to the external port on the WAN, the device will forward the packet to the internal port.
ExternalPort	This field displays a port number (between 0 and 4294967295) the device listens on for NAT connection requests. 0 indicates a wildcard. This sets the device to forward a wildcard packet to the internal port.
InternalPort	This field displays a port number for the internal port (between 1 and 4294967295) to which the device forwards packets with wildcard.
PortMappingProtocol	This field displays the protocol (**UDP** or **TCP**) used for port mapping.
InternalClient	This field displays the IP address or domain name of a host on the LAN. To allow UDP port mapping or multiple NAT clients to use the same port number, use the broadcast address of 255.255.255.255 for the internal client.
PortMappingDescription	This field displays a descriptive name (up to 256 characters) to identify this port mapping entry.

18.13.4 WAN IP Connection Statistics

Display the **Stats** screen to view the statistics of all IP connections on the WAN interface.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number and **Stats** to display the screen as shown.

Figure 209 TR-098: WAN Device: WANIPConnection: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 111 TR-098: WAN Device: WANIPConnection: Stats

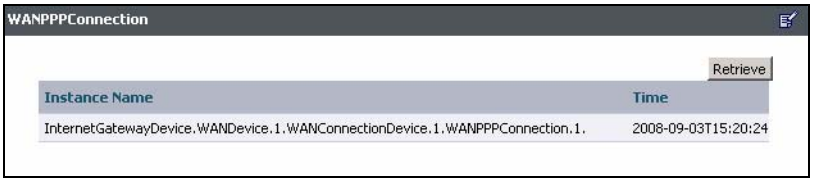
PARAMETER NAME	VALUE
EthernetBytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
EthernetBytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
EthernetPacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
EthernetPacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

18.14 WAN PPP Connection

Display the **WANPPPConnection** screen to view a PPP connection instance on the WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection** to display the screen as shown.

Figure 210 TR-098: WAN Device: WANPPPConnection



18.14.1 WAN PPP Connection Details

Display the detailed **WANPPPConnection** screen to configure and view basic PPP settings for Internet access on the WAN interface.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number to display the screen as shown.

Figure 211 TR-098: WAN Device: WANPPPConnection: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 112 TR-098: WAN Device: WANPPPConnection: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this link is active; otherwise, it displays **0**.
ConnectionStatus	This field displays the link status
PossibleConnectionTypes	This field displays the connection type(s) this link supports.
ConnectionType	This field displays the connection type for this link.
Name	This field displays a descriptive name (up to 256 characters) for this link.
Uptime	This field displays the number of seconds the link has been up.
LastConnectionError	This field displays the cause for the last failed connection attempt.

Table 112 TR-098: WAN Device: WANPPPConnection: Details (continued)

PARAMETER NAME	VALUE
AutoDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) the device is to wait before disconnecting the link. **0** means you do not want the device to disconnect the link automatically.
IdleDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) of inactivity timeout for a link. When the time is reached without any network activity through the link, the device automatically disconnects the link. **0** means you do not want the device to disconnect the link automatically.
WarnDisconnectDelay	This field displays the number of seconds (between 0 and 4294967295) before the device changes the state of the link to the disconnecting state.
RSIPAvailable	This field displays whether the Realm-specific IP (RSIP) feature is supported on the device.
NATEnabled	This field displays **1** to indicate that the NAT (Network Address Translation) feature is enabled for this link; otherwise, this field displays **0**.
Username	This field displays the Internet access account user name (up to 64 characters) provided by the ISP for authentication.
Password	This field displays the Internet access account password (up to 64 characters) provided by the ISP for authentication.
PPPEncryptionProtocol	This field displays the protocol used for PPP encryption between the device and the ISP's network.
PPPCompressionProtocol	This field displays the protocol used for PPP traffic compression between the device and the ISP's network.
PPPAuthenticationProtocol	This field displays the protocol used for PPP connection authentication between the device and the ISP's network.
ExternalIPAddress	This field displays the IP address used by NAT for this connection.
RemoteIPAddress	This field displays the remote IP address for this connection.
MaxMRUSize	This field displays the maximum size (between 1 and 1540) for the Ethernet frames allowed on this link.
CurrentMRUSize	This field displays the current configured maximum frame size allowed from a remote host.
DNSEnabled	This field displays **1** to set the device to resolve domain names through this link; otherwise, this field is **0**.
DNSOverrideAllowed	This field displays **1** to allow a non-empty DNS address to be replaced by a DNS entry received on the WAN; otherwise, this field displays **0**.
DNSServers	This field displays the IP address(es) of the DNS server(s). Multiple IP addresses are separated by a comma.
MACAddress	This field is applicable when you select **Enable** in the **MACAdddressOverride** field. This field displays the MAC address of this interface on the device.
MACAddressOverride	This field displays **1** to allow change of MAC address on this interface in the **MACAddress** field. This field displays **0** if you do not allow MAC address modification.
TransportType	This field displays the transport protocol for the PPP connection.
PPPoEACName	This field displays the descriptive name for the PPPoE Access Concentrator (AC).
PPPoEServiceName	This field displays the descriptive name for the PPPoE service.
ConnectionTrigger	This field displays how the device will establish a connection (**AlwaysOn**, **OnDemand** and **Manual**) for Internet access.

Table 112 TR-098: WAN Device: WANPPPConnection: Details (continued)

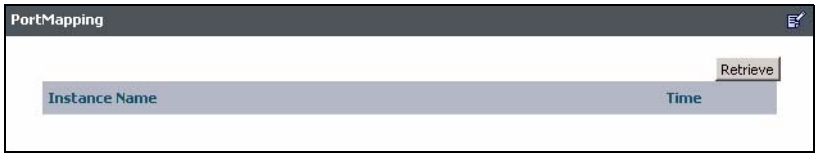
PARAMETER NAME	VALUE
RouteProtocolRx	This field displays the routing protocol (**RIP1**, **RIP2** or **OSPF**) the link is to use. **Off** disables the routing feature.
PPPLCPEcho	This field displays the time (in seconds) for PPP Link Control Protocol (LCP) echo.
PPPLCPEchoRetry	This field displays the time (in seconds) for PPP Link Control Protocol (LCP) echo retry.
ShapingRate	This field displays the rate (in bits per second) the device shapes the outgoing traffic to.
ShapingBurstSize	This field displays the burst size (in bytes) for traffic shaping.
PortMappingNumberOfEntries	This field displays the number of port mappings on this link.

18.14.2 Port Mapping Table

Use the **PortMapping** screen to view the port mapping instance for the WAN PPP connection. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **PortMapping** to display the screen as shown.

Figure 212 TR-098: WAN Device: WANPPPConnection: PortMapping

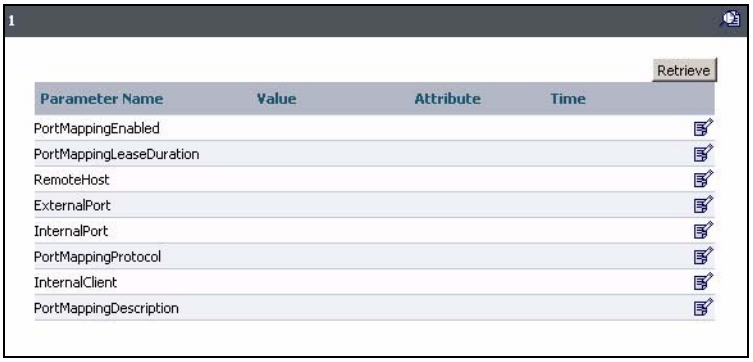


18.14.3 Port Mapping Table Details

Use the detailed **PortMapping** screen to configure the port mapping settings for the WAN PPP connection.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **PortMapping**.
5. Click a number to display the screen as shown.

Figure 213 TR-098: WAN Device: WANPPPConnection: PortMapping: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 113 TR-098: WAN Device: WANPPPConnection: PortMapping: Details

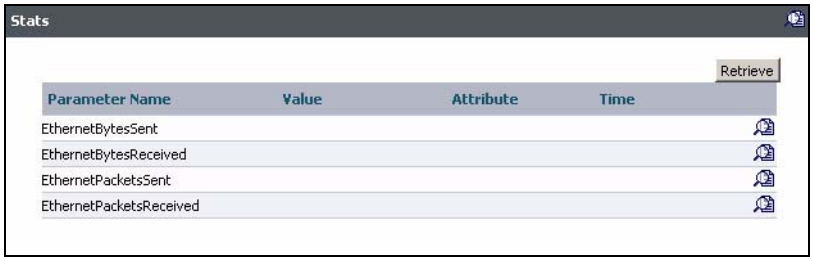
PARAMETER NAME	VALUE
PortMappingEnabled	This field displays **1** to indicate that the port mapping entry on this link is enabled; otherwise this field displays **0**.
PortMappingLeaseDuration	This field displays the time (between 1 to 4294967295 seconds) the device stores the port mapping entry. After this, the entry is removed from the port mapping table. 0 means that a port mapping entry is static and cannot be removed from the port mapping table.
RemoteHost	This field displays the IP address of the remote host device. If this field is blank, it indicates a wildcard which the device must support. In this case, when a packet is sent to the external port on the WAN, the device will forward the packet to the internal port.
ExternalPort	This field displays a port number (between 0 and 4294967295) the device listens on for NAT connection requests. 0 indicates a wildcard. This sets the device to forward a wildcard packet to the internal port.
InternalPort	This field displays a port number for the internal port (between 1 and 4294967295) to which the device forwards packets with wildcard.
PortMappingProtocol	This field displays the protocol (**UDP** or **TCP**) used for port mapping.
InternalClient	This field displays the IP address or domain name of a host on the LAN. To allow UDP port mapping or multiple NAT clients to use the same port number, use the broadcast address of 255.255.255.255 for the internal client.
PortMappingDescription	This field displays a descriptive name (up to 256 characters) to identify this port mapping entry.

18.14.4 WAN PPP Connection Statistics

Display the **Stats** screen to view the statistics of all PPP connections on the WAN interface.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **Stats** to display the screen as shown.

Figure 214 TR-098: WAN Device: WANPPPConnection: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 114 TR-098: WAN Device: WANPPPConnection: Stats

PARAMETER NAME	VALUE
EthernetBytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
EthernetBytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
EthernetPacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
EthernetPacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

PART V
Internet Gateway Device 1.2 (TR-098 Amendment 1)

This part contains the following chapters.

- General Device Setup (277)
- LAN Device (309)
- WAN Device (327)

19

General Device Setup

This chapter describes the general **Configuration** screens you display to view and set basic device settings.

19.1 Internet Gateway Device

You can view the number and type of interfaces on a device.

1. Log into Vantage Access using a manager account and click the **Provision Manager** icon in the control panel.
2. Select a device in the Device List window.
3. Click **Provision** > **Data Model** > **InternetGatewayDevice**.

Figure 215 TR-098 Amendment 1: InternetGatewayDevice

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 115 TR-098 Amendment 1: InternetGatewayDevice

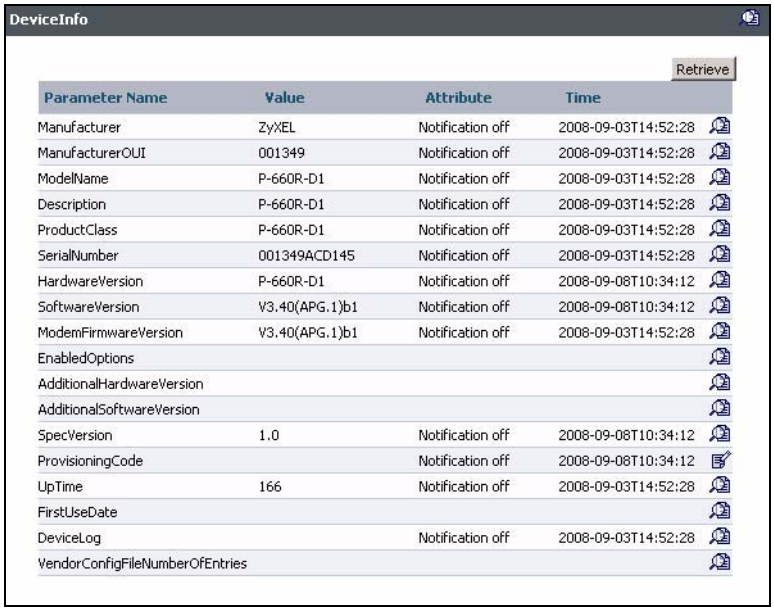
PARAMETER NAME	VALUE
DeviceSummary	This field displays a summary information of the device.
LANDeviceNumberOfEntries	This field displays the number of LAN interfaces on the selected device.
WANDeviceNumberOfEntries	This field displays the number of WAN interfaces on the selected device.

19.2 Device Information

View detailed device information in the **DeviceInfo** screen.

Click **Data Model** > **InternetGatewayDevice** > **DeviceInfo** to display the general information of the selected device.

Figure 216 TR-098 Amendment 1: DeviceInfo



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 116 TR-098 Amendment 1: DeviceInfo

PARAMETER NAME	VALUE
Manufacturer	This is the name of the company that produced this device.
ManufacturerOUI	This field displays the six-hexadecimal-digit OUI (Organization Unit Identifier) of the company. The OUI is a unique number assigned by the IANA. Devices produced by the same company have the same hard-wired OUI.
ModelName	This field displays the device model name.
Description	This field displays additional information about the device.
ProductClass	This field identifies the product class or product over which the **SerialNumber** parameter is unique.
SerialNumber	This field displays the device serial number.
HardwareVersion	This field displays the hardware model name.
SoftwareVersion	This field displays the firmware version number.
ModemFirmware Version	This field displays the modem firmware version number.
EnabledOptions	This field displays the name of the options enabled on the device.
AdditionalHardwareVersion	This field displays the available information of the additional hardware version.
AdditionalSoftwareVersion	This field displays the available information of the additional software version.
SpecVersion	This field displays the specification version implemented on the device.
ProvisioningCode	The provisioning code is used by the service provider to identify specific parameter settings for the device. Enter the identifier of the DSL service provider or provisioning information. You can enter up to 64 characters (use only A-Z, 0-9 and “.” with no spaces allowed).

Table 116 TR-098 Amendment 1: DeviceInfo (continued)

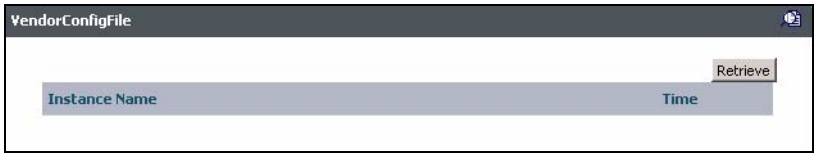
PARAMETER NAME	VALUE
UpTime	This field displays the time (in seconds) since the device was last restarted.
FirstUseDate	This field displays the time and date the device first established a network connection.
DeviceLog	Enter additional information for this device.
VendorConfigFile NumberOfEntries	This field displays the number of configuration files.

19.3 Vendor Configuration File

The **VendorConfigFile** screen displays the name of the vendor configuration file and the time it was first applied on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Click **Data Model** > **InternetGatewayDevice** > **DeviceInfo** > **VendorConfigFile. Click on a file name to display** detailed information.

Figure 217 TR-098 Amendment 1: VendorConfigFile

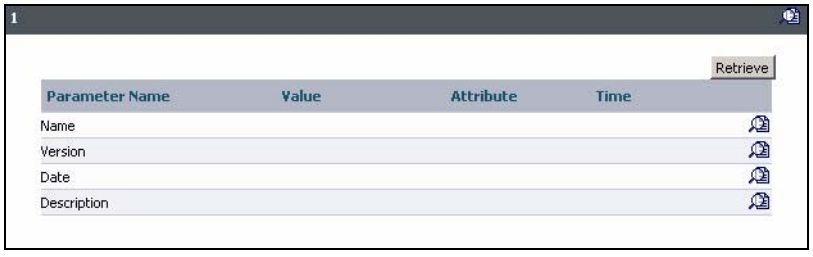


19.3.1 Vendor Configuration File Details

This screen displays detailed vendor configuration file information. You can find this screen using one of the following methods:

- click a file name in the **VendorConfigFile** screen
- click **Data Model** > **InternetGatewayDevice** > **DeviceInfo** > **VendorConfigFile** and click a number.

Figure 218 TR-098 Amendment 1: VendorConfigFile: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 117 TR-098 Amendment 1: VendorConfigFile: Details

PARAMETER NAME	VALUE
Name	This field displays the name of the vendor configuration file applied to the device.
Version	This field displays the version number of the vendor configuration file.
Date	This field displays the time and date the vendor configuration file was applied on the device.
Description	This field displays a description about the vendor configuration file.

19.4 Device Configuration

Display the **DeviceConfig** screen to view general information about the configuration file on a device.

Click **Data Model** > **InternetGatewayDevice** > **DeviceConfig.**

Figure 219 TR-098 Amendment 1: DeviceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 118 TR-098 Amendment 1: DeviceConfig

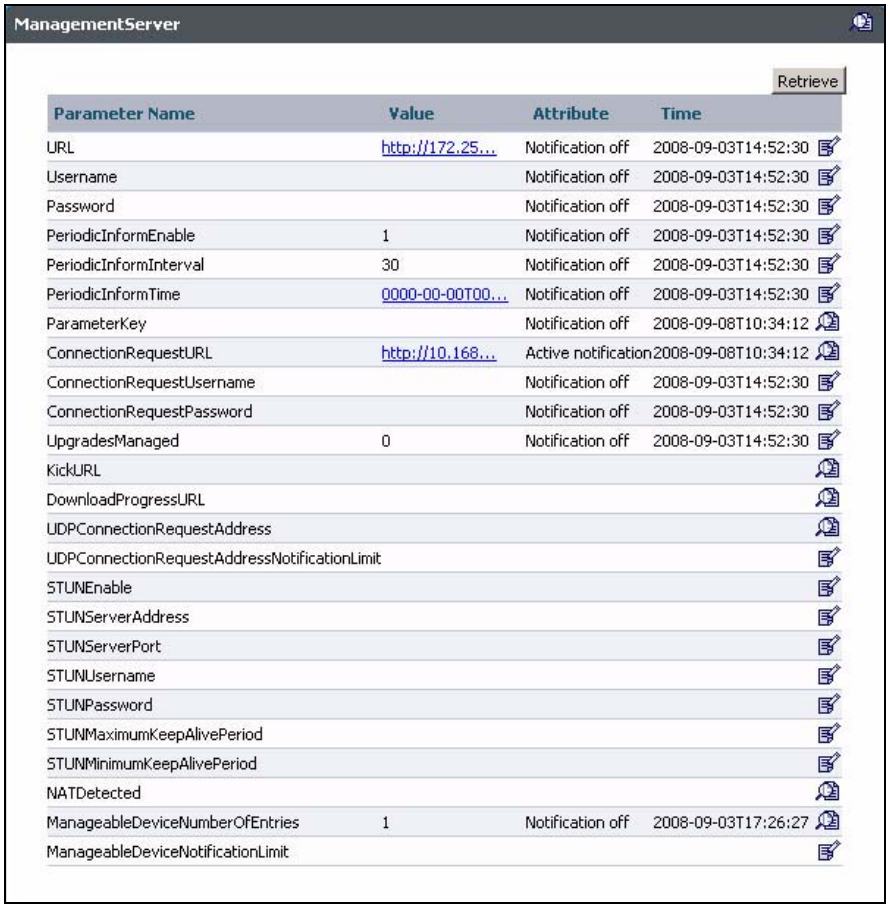
PARAMETER NAME	VALUE
PersistentData	This field displays the configuration data that must remain intact after a device system reboot.
ConfigFile	This field displays the name of the vendor specific configuration file used for the device.

19.5 Management Server

Use the **Management Server** screen to configure settings on the device to connect to the Vantage Access server.

Click **Data Model** > **InternetGatewayDevice** > **ManagementServer.**

Figure 220 TR-098 Amendment 1: ManagementServer



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 119 TR-098 Amendment 1: ManagementServer

PARAMETER NAME	VALUE
URL	This field displays the address of the Vantage Access server to which the device connects for remote management. For example, “http://www.zyxel.com/TR098”.
Username	This field displays the user name the device uses to access Vantage Access.
Password	This field displays the password (up to 256 alphanumeric characters) associated with the user name above. **Note: You must configure the same access user name and password on the device and the Vantage Access server.**
PeriodicInformEnable	This field displays **true** to indicate that the device is set to regularly send device information updates to Vantage Access. This field displays **false** to indicate that this feature is disabled. In this case, you must then manually update device information changes.
PeriodicInformInterval	This field is applicable when the **PeriodicInformEnable** field is **1**. This field displays the time (in seconds) the device is to wait before sending device request information updates to Vantage Access.

Table 119 TR-098 Amendment 1: ManagementServer (continued)

PARAMETER NAME	VALUE
PeriodicInformTime	This field is applicable when in the **PeriodicInformEnable** field is **1**. This field displays the reference time and date the device is to initiate the information updates. The time in the format yyyy-mm-ddThh:mm:ss.
ParameterKey	This field displays the parameter that is changed from the most recent information update.
ConnectionRequestURL	This field displays the URL of the device to which Vantage Access sends a connection request.
ConnectionRequestUsername	This field displays the user name Vantage Access uses to access the device. This is required if you want Vantage Access to initiate a connection and access the device.
ConnectionRequestPassword	This field displays the password associated with the user name above.
UpgradesManaged	This field displays **1** to allow Vantage Access to upgrade firmware on the device. This field displays **0** to indicate that remote firmware upgrade through Vantage Access is disabled.
KickURL	This field displays the URL on the LAN from which the device can initiate a Kick request.
DownloadProgressURL	This field displays the URL of a website on the LAN to which a user's web browser is redirected to display the file transfer progress of the device.
UDPConnectionRequestAddress	This field displays the URL of the device to which Vantage Access sends a UDP connection request.
UDPConnectionRequestAddressNotificationLimit	This field displays the minimum time, in seconds, between Active Notifications resulting from changes to the UDPConnectionRequestAddress (if Active Notification is enabled).
STUNEnable	This displays whether STUN (Simple Traversal of User Datagram Protocol through Network Address Translators (NATs)) is enabled or not.
STUNServerAddress	This displays the STUN server's IP address.
STUNServerPort	This displays the port number of the STUN server.
STUNUsername	This displays the STUN server username.
STUNPassword	This displays the STUN server password associated with the **STUNUsername**.
STUNMaximumKeepAlivePeriod	This displays the STUN server maximum keep-alive period.
STUNMinimumKeepAlivePeriod	This displays the STUN server minimum keep-alive period.
NATDetected	This displays whether NAT (Network Address Translation) is in operation.
ManageableDeviceNumberOfEntries	This displays the number of devices connected to this device that can be managed by Vantage Access.
ManageableDeviceNotificationLimit	This displays the maximum number of manageable devices after which a notification is sent.

19.6 Manageable Device

Use the **Manageable Device** screen to see layer 3 forwarding settings on the device.

Click **Provision** > **Data Model** > **InternetGatewayDevice** > **ManageableDevice**.

Figure 221 TR-098 Amendment 1: Manageable Devices

19.6.1 Manageable Device Details

Use the detailed **Managed Devices** screen to configure the layer 3 forwarding table on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **ManageableDevice**. Then click on an index number.

Figure 222 TR-098 Amendment 1: Manageable Devices: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 120 TR-098 Amendment 1: Manageable Devices: Details

PARAMETER NAME	VALUE
ManufacturerOUI	This displays the OUI of the manageable device.
SerialNumber	This displays the serial number of the manageable device.
ProductClass	This displays the model name of the manageable device.

19.7 Time

Use the **Time** screen to configure time settings (such as the network time server and time zone) on the device.

Click **Data Model** > **InternetGatewayDevice** > **Time.**

Figure 223 TR-098 Amendment 1: Time

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 121 TR-098 Amendment 1: Time

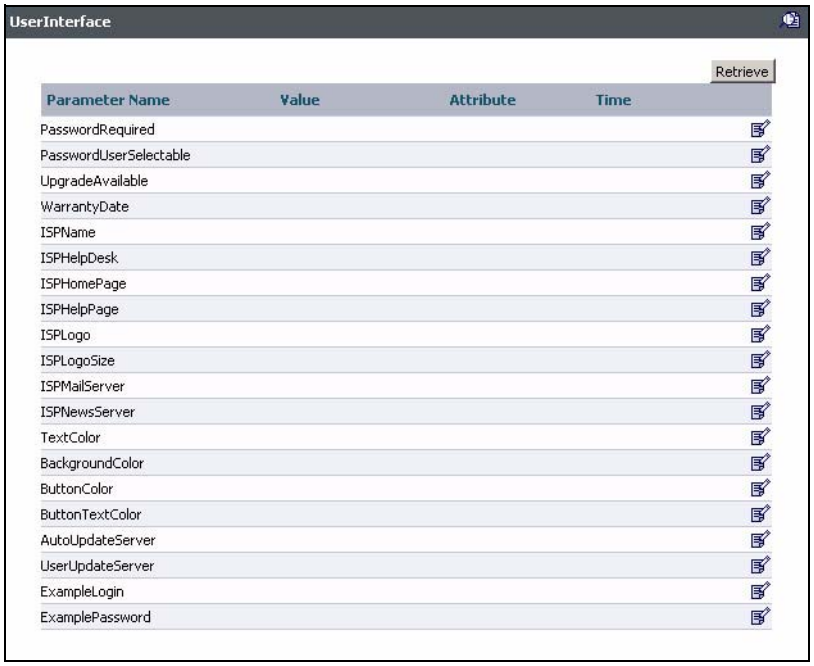
PARAMETER NAME	VALUE
NTPServer1 .. 5	This field displays the IP address or host name of the time server the device is to use to update the system time. For example, “http://www.zyxel.com”.
CurrentLocalTime	This field displays the current system time on the device.
LocalTimeZone	This field displays the time offset from the UTC (Universal Time Coordinate). For example, +08:00.
LocalTimeZoneName	This field displays the name of the local time zone.
DaylightSavingsUsed	This field displays **1** to indicate that daylight savings time is enabled on the device. This field displays **0** if this feature is disabled.
DaylightSavingsStart	This field is applicable if the **DaylightSavingsUsed** field is **1**. This field displays the starting date of the daylight savings time in the format 0000-00-00T00:00:00.
DaylightSavingsEnd	This field is applicable if the **DaylightSavingsUsed** field is **1**. This field displays the end date of the daylight savings time in the format 0000-00-00T00:00:00.

19.8 User Interface

Use the **UserInterface** screen to configure remote management settings to access the web configurator on the device.

Click **Data Model > InternetGatewayDevice > UserInterface to display the screen as shown**.

Figure 224 TR-098 Amendment 1: UserInterface



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 122 TR-098 Amendment 1: UserInterface

PARAMETER NAME	VALUE
PasswordRequired	This field displays **1** if a password is required to log into the web configurator on the device. This field displays **0** if a password is not required.
PasswordUserSelectable	This field displays **1** if a user can specify a different password for Auto-configuration on the device; otherwise it displays **0**.
UpgradeAvailable	This field displays **1** to allow user to view the upgrade information on the device; otherwise it displays **0**.
WarrantyDate	This field displays the time the warranty on the device expires.
ISPName	This field displays the name of your Internet Service Provider (ISP).
ISPHelpDesk	This field displays the telephone number of your ISP's help desk.
ISPHomePage	This field displays the website address of your ISP's home page.
ISPHelpPage	This field displays the website address of your ISP's online support web page.
ISPLogo	This field displays the base64 encoded character for your ISP's logo graphic. The graphic can be a GIF or JEPG file smaller than 4095 bytes.
ISPLogoSize	This field displays the size of the logo graphic file.
ISPMailServer	This field displays the address of your ISP's mail server.
ISPNewsServer	This field displays the address of your ISP's news server.
TextColor	This field displays the color (in six-character RGB number) of the text in the web configurator. For example, FFFFFF means white.
BackgroundColor	This field displays the color (in six-character RGB number) of the background in the web configurator. For example, FFFFFF means white.

Table 122 TR-098 Amendment 1: UserInterface (continued)

PARAMETER NAME	VALUE
ButtonColor	This field displays the color (in six-character RGB number) of the buttons in the web configurator. For example, FFFFFF means white.
ButtonTextColor	This field displays the color (in six-character RGB number) of the text on the buttons in the web configurator. For example, FFFFFF means white.
AutoUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen shows **1** (see Section 19.5 on page 280). This field displays the address of the server the device is to check for new firmware. If new firmware is available, the device is to update the firmware automatically.
UserUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen shows **0** (see Section 19.5 on page 280). This field displays the address of the server a user can check for new firmware updates available for the device.
ExampleLogin	This field displays the correct username format. This is to show users the correct format to enter.
ExamplePassword	This field displays the correct password format. This is to show users the correct format to enter.

19.9 Layer3 Forwarding

Use the **Layer3Forwarding** screen to view the current layer 3 forwarding status and the number of forwarding entries on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > > **InternetGatewayDevice** > **Layer3Forwarding**.

Figure 225 TR-098 Amendment 1: Layer3Forwarding

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 123 TR-098 Amendment 1: Layer3Forwarding

PARAMETER NAME	VALUE
Default ConnectionService	This field displays the complete hierarchical name for the default WAN interface.
ForwardNumberofEntries	This field displays the number of forwarding entries.

19.9.1 Layer3 Forwarding Table

The **Forwarding** screen displays the list of forwarding tables on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Click **Data Model** > **InternetGatewayDevice** > **Layer3Forwarding** > **Forwarding**.

Figure 226 TR-098 Amendment 1: Layer3 Forwarding Table

19.9.2 Layer3 Forwarding Table Details

Use the detailed **Forwarding** screen to configure the layer 3 forwarding table on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer3Forwarding** > **Forwarding.** Then click on an index number.

Figure 227 TR-098 Amendment 1: Layer3 Forwarding Table: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 124 TR-098 Amendment 1: Layer3 Forwarding: Forwarding

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that entry in the forwarding table is enabled. A value of **0** means that the rule is disabled. This is the default setting for new forwarding entries.
Status	This field displays the status of the forwarding entry.
Type	This field displays the route type. **Default** sets the device to route packets with any destination. **Host** sets the device to route packets to a specific destination IP address. **Network** sets the device to route packets to an IP network.
DestIPAddress	This field displays the destination IP address in dotted decimal notation for the route entry.
DestSubnetMask	This field displays the destination subnet mask in dotted decimal notation for the route entry.
SourceIPAddress	This field displays the source IP address in dotted decimal notation for the route entry.

Table 124 TR-098 Amendment 1: Layer3 Forwarding: Forwarding (continued)

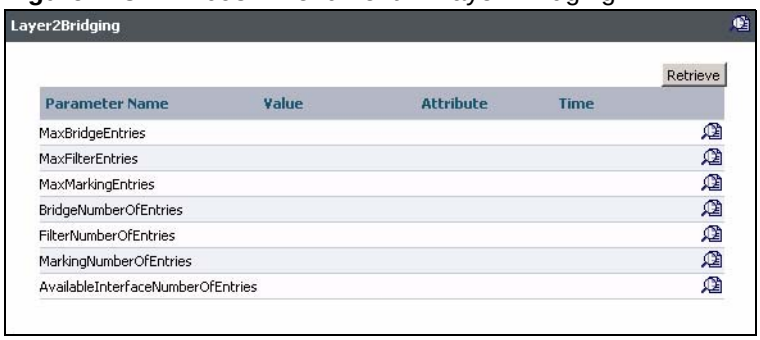
PARAMETER NAME	VALUE
SourceSubnetMask	This field displays the source subnet mask in dotted decimal notation for the route entry.
ForwardingPolicy	This field displays the index number of the forwarding policy the device is to use.
GatewayIPAddress	This field displays the IP address of the gateway in dotted decimal notation for the route entry.
Interface	This field displays the hierarchical name of the WAN interface associated to this route entry. For example, “InternetGatewayDevice.WANDevice.1.-WANConnectionDevice.1.WANPPPConnection.1”
ForwardingMetric	This field displays the number of hops to the destination. This is associated to the cost of the route. **-1** means this route is not used to forward traffic.
MTU	This field displays the maximum Ethernet packet size allowed on this route.

19.10 Layer2 Bridging

Use the **Layer2Bridging** screen to configure the bridge settings between layer2 LAN and/or WAN interfaces on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging**.

Figure 228 TR-098 Amendment 1: Layer2Bridging



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 125 TR-098 Amendment 1: Layer2Bridging

LABEL	DESCRIPTION
MaxBridgeEntries	This field displays the maximum number of entries in the bridge table.
MaxFilterEntries	This field displays the maximum number of entries in the filter table.
MaxMarkingEntries	This field displays the maximum number of entries in the marking table.
BridgeNumberOfEntries	This field displays the number of entries in the bridge table.
FilterNumberOfEntries	This field displays the number of entries in the filter table.

Table 125 TR-098 Amendment 1: Layer2Bridging (continued)

LABEL	DESCRIPTION
MarkingNumberOfEntries	This field displays the number of entries in the marking table.
AvailableInterfaceNumberOfEntries	This field displays the number of entries in the interface table.

19.10.1 Bridging Table

Use the **Bridge** screen to view the bridge table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **Bridge**.

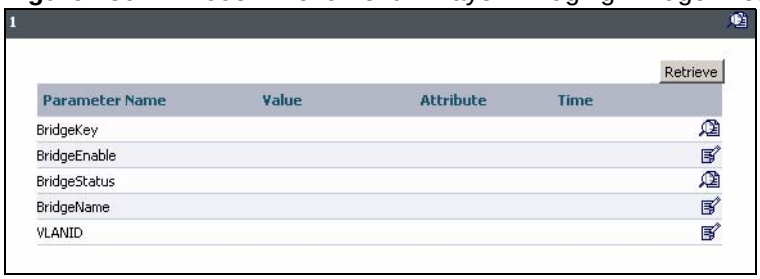
Figure 229 TR-098 Amendment 1: Layer2Bridging: Bridge

19.10.2 Bridging Table Details

Use the detailed **Bridge** screen to view and configure the bridge table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > > **InternetGatewayDevice** > **Layer2Bridging** > **Bridge**. Click a number to display the screen.

Figure 230 TR-098 Amendment 1: Layer2Bridging: Bridge: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 126 TR-098 Amendment 1: Layer2Bridging: Bridge: Details

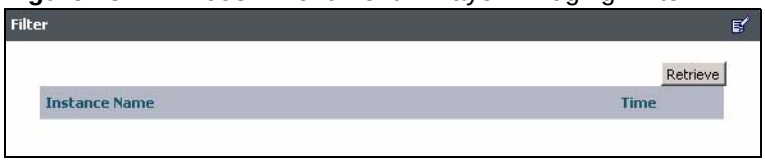
LABEL	DESCRIPTION
BridgeKey	This field displays the index number of the entry.
BridgeEnable	This field indicates whether the entry is activated or not.
BridgeStatus	This field displays the status of the entry.
BridgeName	This field displays the descriptive name of the entry.
VLANID	This field displays the ID of the VLAN to which the entry belongs.

19.10.3 Filter Table

Use the **Filter** screen to view the filter table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > > **InternetGatewayDevice** > **Layer2Bridging** > **Filter**.

Figure 231 TR-098 Amendment 1: Layer2Bridging: Filter



19.10.4 Filter Table Details

Use the detailed **Filter** screen to view and configure the filter table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > > **InternetGatewayDevice** > **Layer2Bridging** > **Filter**. Click a number to display the screen.

Figure 232 TR-098 Amendment 1: Layer2Bridging: Filter: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 127 TR-098 Amendment 1: Layer2Bridging: Filter: Details

LABEL	DESCRIPTION
FilterKey	This field displays the index number of the filter table entry.
FilterEnable	This field displays whether the entry is enabled.
FilterStatus	This field displays the status of the entry.
FilterBridgeReference	This field displays the index number of the bridge table entry associated with this filter table entry.
ExclusivityOrder	This field displays whether the device is to match the filter table exclusively or non-exclusively.
FilterInterface	This field displays the name of the interface to which this filter table entry is applied.
VLANIDFilter	This field displays the VLAN ID of the packets the device is to filter on the specified interface.
AdmitOnlyVLANTagged	This field displays whether the device is to allow tagged-only packets.
EthertypeFilterList	This field displays the Ethernet type(s) for the filter list. Multiple entries are separated by commas.
EthertypeFilterExclude	This field displays whether the filter is to allow packets with the Ethernet type not specified.
SourceMACAddressFilterList	This field displays the list of source MAC address(es) to filter. Multiple entries are separated by commas.
SourceMACAddressFilterExclude	This field displays whether the filter is to allow packets with the source MAC address(es) not specified.
DestMACAddressFilterList	This field displays the list of destination MAC address(es) to filter. Multiple entries are separated by commas.
DestMACAddressFilterExclude	This field displays whether the filter is to allow packets with the destination MAC address(es) not specified.
SourceMACFromVendorClassIDFilter	This field displays the list of device vendor ID (obtained through DHCP) to which source MAC address filter is applied. Multiple entries are separated by commas.
SourceMACFromVendorClassIDFilterExclude	This field displays whether the filter is to allow packets with the vendor ID not specified for the source MAC.
DestMACFromVendorClassIDFilter	This field displays the list of device vendor ID (obtained through DHCP) to which destination MAC address filter is applied. Multiple entries are separated by commas.
DestMACFromVendorClassIDFilterExclude	This field displays whether the filter is to allow packets with the vendor ID not specified for the destination MAC.
SourceMACFromClientIDFilter	This field displays the list of DHCP client ID (option61, RFC2132) to which source MAC address filter is applied. Multiple entries are separated by commas.
SourceMACFromClientIDFilterExclude	This field displays whether the filter is to allow packets with the client ID not specified for the source MAC.
DestMACFromClientIDFilter	This field displays the list of DHCP client ID (option61, RFC2132) to which destination MAC address filter is applied. Multiple entries are separated by commas.

Table 127 TR-098 Amendment 1: Layer2Bridging: Filter: Details (continued)

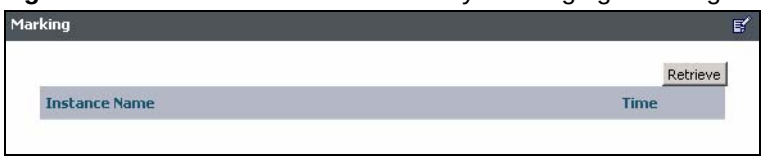
LABEL	DESCRIPTION
DestMACFromClientIDFilterExclude	This field displays whether the filter is to allow packets with the client ID not specified for the destination MAC.
SourceMACFromUserClassIDFilter	This field displays the list of DHCP user class identification ID (option77, RFC3004) to which source MAC address filter is applied. Multiple entries are separated by commas.
SourceMACFromUserClassIDFilterExclude	This field displays whether the filter is to allow packets with the class identification ID not specified for the source MAC.
DestMACFromUserClassIDFilter	This field displays the list of DHCP user class identification ID (option77, RFC3004) to which destination MAC address filter is applied. Multiple entries are separated by commas.
DestMACFromUserClassIDFilterExclude	This field displays whether the filter is to allow packets with the class identification ID not specified for the destination MAC.

19.10.5 Marking Table

Use the **Marking** screen to view the marking table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > > **InternetGatewayDevice** > **Layer2Bridging** > **Marking**.

Figure 233 TR-098 Amendment 1: Layer2Bridging: Marking

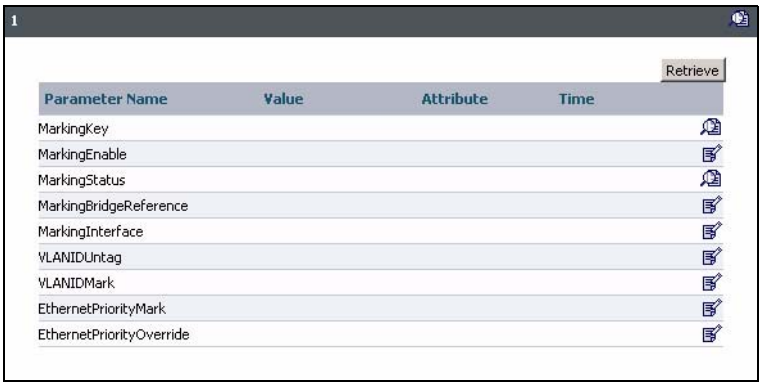


19.10.6 Marking Table Details

Use the detailed **Marking** screen to view and configure the marking table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **Marking**. Click a number to display the screen.

Figure 234 TR-098 Amendment 1: Layer2Bridging: Marking: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 128 TR-098 Amendment 1: Layer2Bridging: Marking: Details

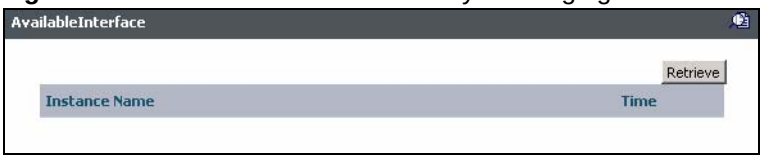
LABEL	DESCRIPTION
MarkingKey	This field displays the index number of the marking table entry.
MarkingEnable	This field displays whether the marking table entry is activated or not.
MarkingStatus	This field displays the status of the marking table entry.
MarkingBridgeReference	This field displays the index number of the bridge table entry associated with this marking table entry.
MarkingInterface	This field displays the name of the interface to which the device applies this marking table entry.
VLANIDUntag	This field displays whether the device removes the VLAN tag from outgoing packets on the interface.
VLANIDMark	This field displays the VLAN ID of the outgoing packets to which this marking table entry is to apply.
EthernetPriorityMark	This field displays the Ethernet priority level to add to incoming packets on the interface. -1 means that the device does not change the priority level assigned by the classifier.
EthernetPriorityOverride	This field displays whether the priority level marking is to apply to all packets on the interface.

19.10.7 Available Interface Table

Use the **AvailableInterface** screen to view the interface table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > > **InternetGatewayDevice** > **Layer2Bridging** > **AvailableInterface**.

Figure 235 TR-098 Amendment 1: Layer2Bridging: AvailableInterface

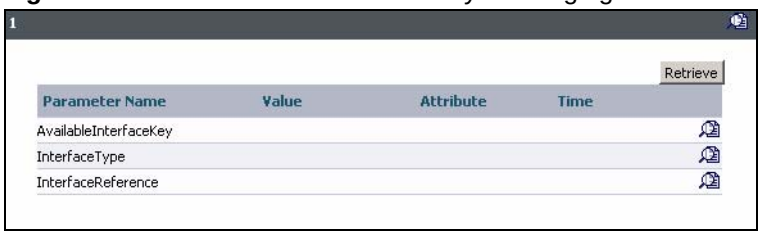


19.10.8 Available Interface Table Details

Use the detailed **AvailableInterface** screen to view and configure the interface table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **Layer2Bridging** > **AvailableInterface**. Click a number to display the screen.

Figure 236 TR-098 Amendment 1: Layer2Bridging: AvailableInterface: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 129 TR-098 Amendment 1: Layer2Bridging: AvailableInterface: Details

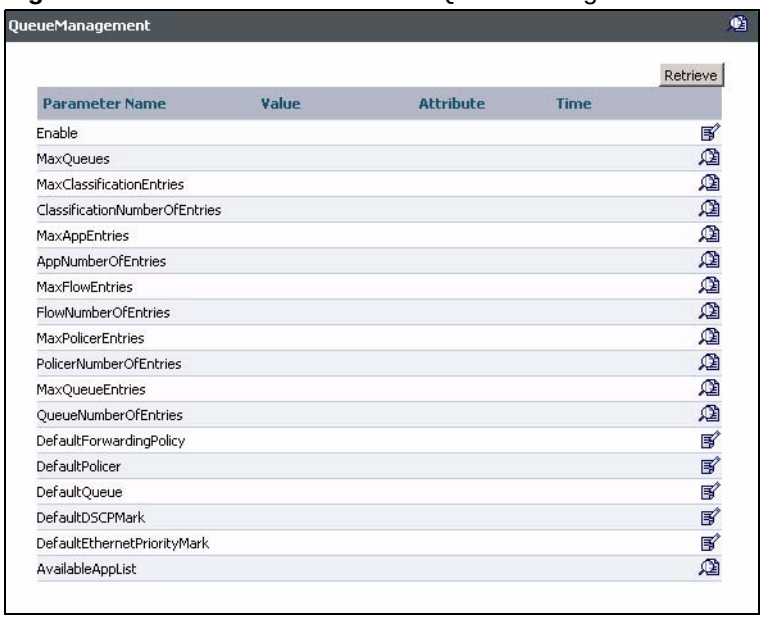
LABEL	DESCRIPTION
AvailableInterfaceKey	This field displays the index number of the available interface table entry.
InterfaceType	This field displays the type of interface.
InterfaceReference	This field displays the parameter name of the interface.

19.11 Queue Management

Use the **QueueManagement** screen to configure settings to manage queues on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement**.

Figure 237 TR-098 Amendment 1: QueueManagement



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 130 TR-098 Amendment 1: QueueManagement

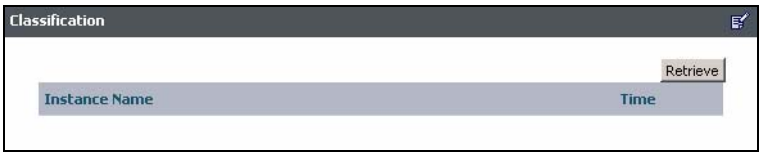
LABEL	DESCRIPTION
Enable	This field displays whether queue management is activated or not.
MaxQueues	This field displays the maximum number of queues on the device.
MaxClassificationEntries	This field displays the maximum number of entries in the classification table.
ClassificationNumberOfEntries	This field displays the number of entries currently in the classification table.
MaxAppEntries	This field displays the maximum number of entries in the application table.
AppNumberOfEntries	This field displays the number of entries currently in the application table.
MaxFlowEntries	This field displays the maximum number of entries in the flow table.
FlowNumberOfEntries	This field displays the number of entries currently in the flow table.
MaxPolicerEntries	This field displays the maximum number of entries in the policer table.
PolicerNumberOfEntries	This field displays the number of entries currently in the policer table.
MaxQueueEntries	This field displays the maximum number of entries in the queue table.
QueueNumberOfEntries	This field displays the number of entries currently in the queue table.
DefaultForwardingPolicy	This field displays the index number of the forwarding policy table associated to the traffic.
DefaultPolicer	This field displays the index number of the default policer table for traffic without a specified classifier.
DefaultQueue	This field displays the index number of the default queue table for traffic without a specified classifier.
DefaultDSCPMark	This field displays the default DiffServ Code Point (DSCP) for traffic without a specified classifier.
DefaultEthernetPriorityMark	This field displays the default priority level for traffic without a specified classifier.
AvailableAppList	This field displays a comma-separated list of protocols supported by the application table.

19.11.1 Queue Classification

Use the **Classification** screen to view the classification table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement**> **Classification**.

Figure 238 TR-098 Amendment 1: QueueManagement: Classification



19.11.2 Queue Classification Details

Use the detailed **Classification** screen to view and configure queue classification settings.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Classification**. Click a number to display the screen.

Figure 239 TR-098 Amendment 1: QueueManagement: Classification: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 131 TR-098 Amendment 1: QueueManagement: Classification: Details

LABEL	DESCRIPTION
ClassificationKey	This field displays the index number of the classification table.
ClassificationEnable	This field displays whether the classification table is activated or not.
ClassificationStatus	This field displays the status of the classification table.
ClassificationOrder	This field displays the precedence of the entry in the classification table.
ClassInterface	This field displays the interface associated to this classification table. This is one of the classification criteria.
DestIP	This field displays the destination IP address to be classified.
DestMask	This field displays the destination subnet mask of the destination IP address to be classified.
DestIPExclude	This field displays whether the device is to classify packets with destination IP address(es) not specified above.
SourceIP	This field displays the source IP address of the packet to be classified.
SourceMask	This field displays the subnet mask of the source IP address to be classified.
SourceIPExclude	This field displays whether the device is to classify packets whose source IP address is not specified above.
Protocol	This field displays the protocol number to classify.
ProtocolExclude	This field displays whether the device is to classify packets whose protocol type is not specified above.
DestPort	This field displays the destination port number to be classified.
DestPortRangeMax	This field displays the end of the destination port number range the device is to classify.
DestPortExclude	This field displays whether the device is to classify packets whose destination port number is not specified above or in the range.
SourcePort	This field displays the source port number to be classified.
SourcePortRangeMax	This field displays the end of the source port number range the device is to classify.
SourcePortExclude	This field displays whether the device is to classify packets whose source port number is not specified above.
SourceMACAddress	This field displays the source MAC address to be classified.
SourceMACMask	This field displays the network portion of the source MAC address the device is to classify.
SourceMACExclude	This field displays whether the device is to classify packets whose source MAC address is not specified above.
DestMACAddress	This field displays the destination MAC address to be classified.
DestMACMask	This field displays the network portion of the destination MAC address the device is to classify.
DestMACExclude	This field displays whether the device is to classify packets whose destination MAC address is not specified above.
Ethertype	This field displays the Ethernet type to be classified.
EthertypeExclude	This field displays whether the device is to classify packets whose Ethernet type is not specified above.

Table 131 TR-098 Amendment 1: QueueManagement: Classification: Details

LABEL	DESCRIPTION
SSAP	This field displays the value of the Source link Service Access Point (SSAP) the device is to classify.
SSAPExclude	This field displays whether the device is to classify packets whose SSAP value is not specified above.
DSAP	This field displays the value of the Destination link Service Access Point (SSAP) the device is to classify.
DSAPExclude	This field displays whether the device is to classify packets whose DSAP value is not specified above.
LLCControl	This field displays the control value in the Logical Link Control (LLC) header the device is to classify.
LLCControlExclude	This field displays whether the device is to classify packets whose control value in the LLC header is not specified above.
SNAPOUI	This field displays the OUI value in the SNAP header the device is to classify.
SNAPOUIExclude	This field displays whether the device is to classify packets whose OUI value in the SNAP header is not specified above.
SourceVendorClassID	This field displays the source vendor class ID the device is to classify.
SourceVendorClassIDExclude	This field displays whether the device is to classify packets whose source vendor class ID is not specified above.
DestVendorClassID	This field displays the destination vendor class ID the device is to classify.
DestVendorClassIDExclude	This field displays whether the device is to classify packets whose destination vendor class ID is not specified above.
SourceClientID	This field displays the source client ID the device is to classify.
SourceClientIDExclude	This field displays whether the device is to classify packets whose source client ID is not specified above.
DestClientID	This field displays the destination client ID the device is to classify.
DestClientIDExclude	This field displays whether the device is to classify packets whose destination client ID is not specified above.
SourceUserClassID	This field displays the source user class ID the device is to classify.
SourceUserClassIDExclude	This field displays whether the device is to classify packets whose source user class ID is not specified above.
DestUserClassID	This field displays the destination user class ID the device is to classify.
DestUserClassIDExclude	This field displays whether the device is to classify packets whose destination user class ID is not specified above.
TCPACK	This field displays whether the device is to classify packets with ACK control bit set in all TCP segments.
TCPACKExclude	This field displays whether the class includes packets not marked by TCPACK above.
IPLengthMin	This field displays the minimum IP packet length in bytes.
IPLengthMax	This field displays the maximum IP packet length in bytes.
IPLengthExclude	This field displays whether the device is to classify packets whose IP packet length falls within the range specified above.
DSCPCheck	This field displays whether the device is to match the DSCP in the packets.
DSCPExclude	This field displays whether the device is to classify packets whose DSCP matches or does not match DSCPCheck above.

Table 131 TR-098 Amendment 1: QueueManagement: Classification: Details

LABEL	DESCRIPTION
DSCPMark	This field displays whether the device is to change the DSCP settings on incoming packets.
EthernetPriorityCheck	This field displays whether the device is to match the priority level in the packets.
EthernetPriorityExclude	This field displays whether the device is to classify packets whose priority level matches or does not match EthernetPriorityCheck above.
EthernetPriorityMark	This field displays whether the device is to change the priority level on incoming packets.
VLANIDCheck	This field displays whether the device is to match the VLAN ID in the packets.
VLANIDExclude	This field displays whether the device is to classify packets whose VLAN ID matches or does not match VLANIDCheck above.
ForwardingPolicy	This field displays whether the device is to change the VLAN ID on incoming packets.
ClassPolicer	This field displays the name of the policer instance associated to this classification table.
ClassQueue	This field displays the name of the queue instance associated to this classification table.
ClassApp	This field displays the name of the application instance associated to this classification table.

19.11.3 Application Queue

Use the **App** screen to view the application queue list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **App**.

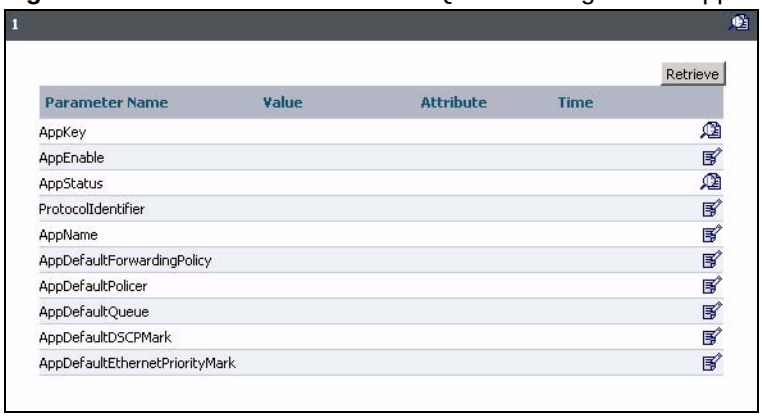
Figure 240 TR-098 Amendment 1: QueueManagement: App

19.11.4 Application Queue Details

Use the detailed **App** screen to view and configure the application queue table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **App**. Click a number to display the screen.

Figure 241 TR-098 Amendment 1: QueueManagement: App: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 132 TR-098 Amendment 1: QueueManagement: App: Details

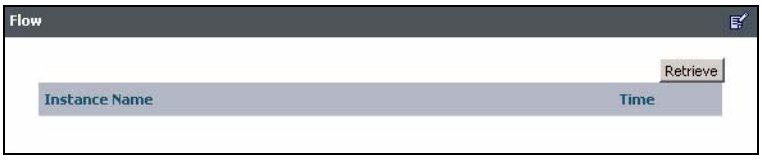
LABEL	DESCRIPTION
AppKey	This field displays the index number of the application table entry.
AppEnable	This field displays whether this entry is activated or not.
AppStatus	This field displays the status of the entry.
ProtocolIdentifier	This field displays the number that identifies the protocol.
AppName	This field displays the descriptive name of the protocol.
AppDefaultForwardingPolicy	This field displays the index number of the forwarding policy entry associated with this entry.
AppDefaultPolicer	This field displays the index number of the policer table entry associated with this entry.
AppDefaultQueue	This field displays the index number of the queue table entry associated with this entry.
AppDefaultDSCPMark	This field displays the default DSCP marking associated with this entry.
AppDefaultEthernetPriorityMark	This field displays the default priority level associated with this entry.

19.11.5 Queue Flow

Use the **Flow** screen to view the queue flow table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Flow**.

Figure 242 TR-098 Amendment 1: QueueManagement: Flow



19.11.6 Queue Flow Details

Use the detailed **Flow** screen to view and configure the queue flow table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Flow**. Click a number to display the screen.

Figure 243 TR-098 Amendment 1: QueueManagement: Flow: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 133 TR-098 Amendment 1: QueueManagement: Flow: Details

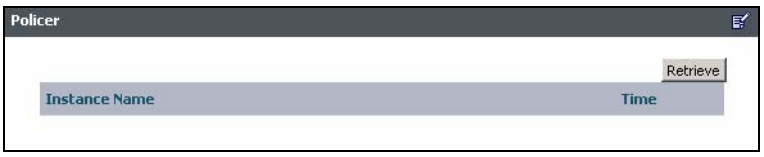
LABEL	DESCRIPTION
FlowKey	This field displays the index number of the flow table entry.
FlowEnable	This field displays whether this entry is activated or not.
FlowStatus	This field displays the status of the entry.
FlowType	This field displays the flow type associated with the queue and policer.
FlowTypeParameters	This field displays the value of the flow type.
FlowName	This field displays the descriptive name for this entry.
AppIdentifier	This field displays the index number of the application table entry associated with this entry.
FlowForwardingPolicy	This field displays the index number of the forwarding policy entry associated with this entry.
FlowPolicer	This field displays the index number of the policer table entry associated with this entry.
FlowQueue	This field displays the index number of the queue table entry associated with this entry.
FlowDSCPMark	This field displays the default DSCP marking associated with this entry.
FlowEthernetPriorityMark	This field displays the default priority level associated with this entry.

19.11.7 Queue Policer

Use the **Policer** screen to view the queue policy table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Policer**.

Figure 244 TR-098 Amendment 1: QueueManagement: Policer



19.11.8 Queue Policer Details

Use the detailed **Policer** screen to view and configure the queue policy table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Policer**. Click a number to display the screen.

Figure 245 TR-098 Amendment 1: QueueManagement: Policer: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 134 TR-098 Amendment 1: QueueManagement: Policer: Details

LABEL	DESCRIPTION
PolicerKey	This field displays the index number of the policer table entry.
PolicerEnable	This field displays whether the entry is activated or not.
PolicerStatus	This field displays the current status of the entry.
CommittedRate	This field displays the committed rate (in bits/sec) allowed for this entry.

Table 134 TR-098 Amendment 1: QueueManagement: Policer: Details (continued)

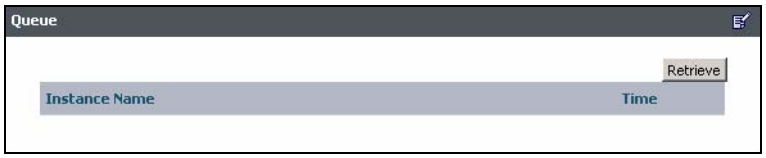
LABEL	DESCRIPTION
CommittedBurstSize	This field displays the committed burst rate (in bytes) for this entry.
ExcessBurstSize	This field displays the excess burst rate (in bytes) for this entry.
PeakRate	This field displays the peak rate (in bits/sec) allowed for this entry.
PeakBurstSize	This field displays the peak burst rate (in bytes) for this entry.
MeterType	This field displays the traffic measurement method to use for this entry.
PossibleMeterTypes	This field displays the comma-separated list of supported traffic measurement types.
ConformingAction	This field displays how the device is to handle conforming traffic.
PartialConformingAction	This field displays how the device is to handle partially conforming traffic.
NonConformingAction	This field displays how the device is to handle non-conforming traffic.
CountedPackets	This field displays the number of packets as a result of the count meter action.
CountedBytes	This field displays the number of bytes as a result of the count meter action.

19.11.9 Queue

Use the **Queue** screen to view the queue table list on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the **Device List window and click Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Queue**.

Figure 246 TR-098 Amendment 1: QueueManagement: Queue



19.11.10 Queue Details

Use the detailed **Queue** screen to view and configure the queue table entry on the device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **QueueManagement** > **Queue**. Click a number to display the screen.

Figure 247 TR-098 Amendment 1: QueueManagement: Queue: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 135 TR-098 Amendment 1: QueueManagement: Queue: Details

LABEL	DESCRIPTION
QueueKey	This field displays the index number of the queue table entry.
QueueEnable	This field displays whether the entry is activated or not.
QueueStatus	This field displays the current status of the entry.
QueueInterface	This field displays the name of the interface to which the entry is applied.
QueueBufferLength	This field displays the queue buffer size in bytes.
QueueWeight	This field displays the queue weight for weighted queuing methods.
QueuePrecedence	This field displays the priority level of the queue relative to other queues.
REDThreshold	This field displays the threshold for Random Early Discard (RED) algorithm.
REDPercentage	This field displays the percentage for Random Early Discard (RED) algorithm.
DropAlgorithm	This field displays the name of the drop algorithm for this queue in case of network congestion.
SchedulerAlgorithm	This field displays the name of the algorithm used by the scheduler.
ShapingRate	This field displays the shaping rate for the queue.
ShapingBurstSize	This field displays the burst size in bytes for traffic shaping.

19.12 LAN Configuration Security

Use the **LANConfigSecurity** screen to display and configure the password to allow LAN access on the device for auto-configuration settings. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANConfigSecurity.**

Figure 248 TR-098 Amendment 1: LANConfigSecurity

19.13 IP Ping Diagnostics

Use the **IPPingDiagnostics** screen to configure the ping test settings on a device.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **IPPingDiagnostics.**

Figure 249 TR-098 Amendment 1: IPPingDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 136 TR-098 Amendment 1: IPPingDiagnostics

LABEL	DESCRIPTION
DiagnosticsState	This field displays the ping test result.
Interface	This field displays the hierarchical name of the interface for ping diagnostics. For example, “InternetGatewayDevice.WANDevice.1.-WANConnectionDevice.1.WANPPPConnection.1” You can enter up to 256 characters for the interface name.
Host	This field displays the IP address or domain name of the host the device is to ping to test the connection.
NumberOfRepetitions	This field displays the number of ping test before displaying the result.
Timeout	This field displays the timeout (in milli-seconds) for a ping test.
DataBlockSize	This field displays the size of the packet to send for each ping test.
DSCP	This field displays the DiffServ Code Point (DSCP) to use for the test packets. The default is 0.
SuccessCount	This field displays the number of ping tests that are successful before the timeout.

Table 136 TR-098 Amendment 1: IPPingDiagnostics (continued)

LABEL	DESCRIPTION
FailureCount	This field displays the number of ping tests that failed.
AverageResponseTime	This field displays the average response time (in milli-seconds) of successful ping tests. If there are no successful responses, this field displays 0.
MinimumResponseTime	This field displays the minimum response time (in milli-seconds) of successful ping tests. If there are no successful responses, this field displays 0.
MaximumResponse Time	This field displays the maximum response time (in milli-seconds) of successful ping tests. If there are no successful responses, this field displays 0.

20

LAN Device

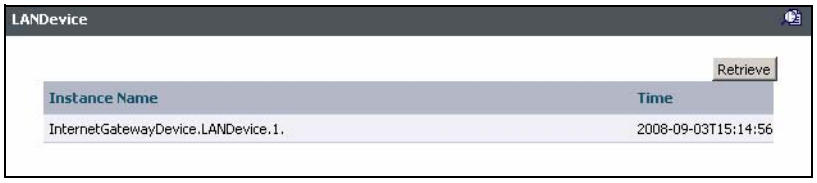
This chapter describes the screens you use to configure and view LAN settings.

20.1 LAN Device Screen

Use the **LANDevice** screens to configure or view the LAN interface settings on the selected device. The number of screens and field labels available vary depending on your device model. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANDevice** to display the screen.

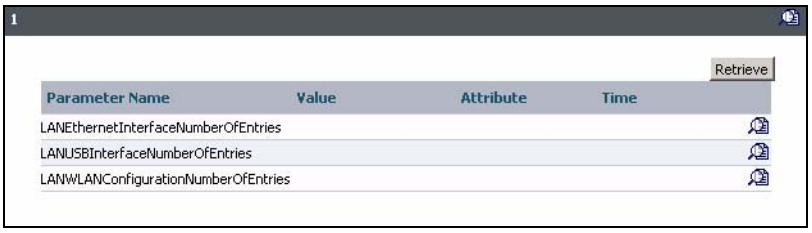
Figure 250 TR-098 Amendment 1: LANDevice



20.1.1 Detailed LAN Device Information

Use this screen to view detailed LAN device information. To find this screen, click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANDevice** and a number.

Figure 251 TR-098 Amendment 1: LANDevice: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 137 TR-098 Amendment 1: LANDevice: Details

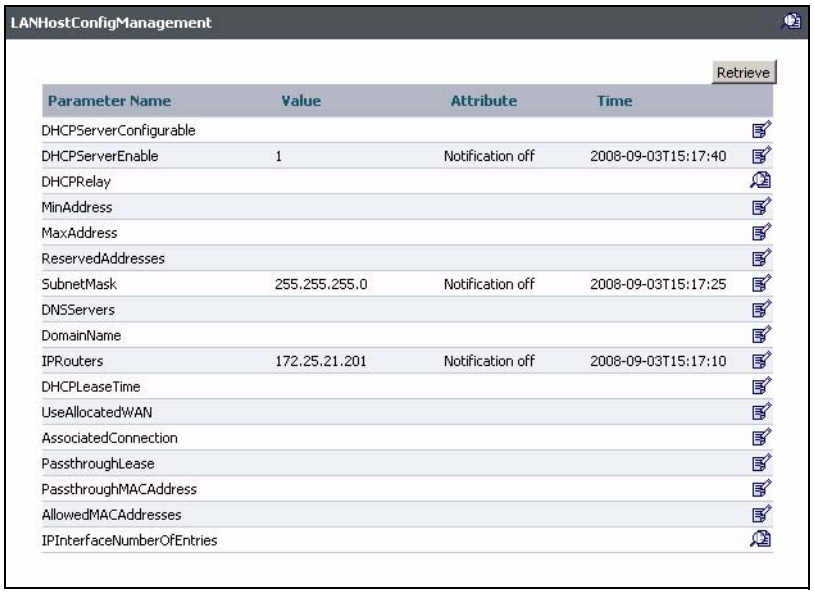
PARAMETER NAME	VALUE
LANEthernetInterfaceNumberOfEntries	This field displays the number of instances on the LAN interface.
LANUSBInterfaceNumberOfEntries	This field displays the number of instances on the USB interface.
LANWLANConfigurationNumberOfEntries	This field displays the number of instances on the WLAN interface.

20.2 LAN Host Configuration Management

Use the **LANHostConfigManagement** screen to view and configure DHCP settings on the LAN interface.

Select a registered device in the Device List window and click **Provision** > **Data Model** > **InternetGatewayDevice** > **LANDevice**. Click a number and **LANHostConfigManagement** to display the screen.

Figure 252 TR-098 Amendment 1: LAN Device: LANHostConfigManagement



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 138 TR-098 Amendment 1: LAN Device: LANHostConfigManagement

PARAMETER NAME	VALUE
DHCPServerConfigurable	This field displays **1** if Vantage Access can change the default DHCP server setting on the LAN interface. This field displays **0** to have the device use the default DHCP server settings on the LAN. No changes are allowed.
DHCPServerEnable	This field displays **1** to indicate that the DHCP server setting on the LAN interface in enabled. This field displays **0** to indicate that the DHCP server setting on the LAN interface is disabled.
DHCPRelay	This field displays **1** when the device is set to act as a DHCP relay on the LAN. The device will forward DHCP requests from the clients to the actual DHCP server on the LAN. In this case, you must set up a DHCP server. This field displays **0** when DHCP relay is deactivated. In this case, the device acts as a DHCP server.
MinAddress	This field displays the first IP address in the DHCP IP pool the DHCP server assigns to a DHCP client on the LAN.
MaxAddress	This field displays the last IP address in the DHCP IP pool the DHCP server assigns to a DHCP client on the LAN.
ReservedAddresses	This field displays the IP address(es) in the DHCP IP pool that is reserved and not assigned to a DHCP client on the LAN. IP addresses are separated by a comma (,).
SubnetMask	This field displays the subnet mask for the DHCP clients.
DNSServers	This field displays the IP address of the DNS server whose information the device sends to the DHCP clients. DNS server IP addresses are separated by a comma (,).
DomainName	This field displays the domain name the device is to assign to DHCP clients.
IPRouters	This field displays the IP address of the default gateway on the LAN. IP addresses are separated by a comma (,).
DHCPLeaseTime	This field displays the lease time (in seconds) for the assigned IP address to DHCP client(s). This field displays **-1** to indicate that a lease time never times out.
UseAllocatedWAN	This field displays how the device is to assign DHCP client IP address(es). **Normal** means the device is set to assign IP address from the DHCP IP pool configured. **UserAllocatedSubnet** means the device is set to assign IP address from the range of WAN IP addresses provided by your ISP. **Passthrough** means the device is set to assign IP address to the DHCP client whose MAC address is marked for passthrough.
AssociatedConnection	This field is applicable if the **UseAllocatedWAN** field displays **UseAllocatedSubnet** or **Passthrough**. This field displays the complete hierarchical name for the default WAN interface to which this connection is associated.
PassthroughLease	This field displays the lease time (in seconds) to DHCP clients when the WAN IP address is passthrough.
PassthroughMACAddress	This field is applicable if you select **Passthrough** in the **UseAllocatedWAN** field.

Table 138 TR-098 Amendment 1: LAN Device: LANHostConfigManagement (continued)

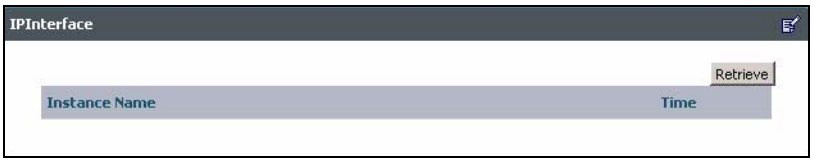
PARAMETER NAME	VALUE
AllowedMACAddresses	This field displays the MAC address(es) allowed to pass through the LAN.
IPInterfaceNumberOfEntries	This field displays the number of IP subnets on the LAN. This field is **1** if IP alias is not supported on the LAN.

20.2.1 IP Interface

The **IPInterface** screen allows you to view IP settings per each subnet on the LAN. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice** > **LANHostConfigManagement**. Click **IPInterface** to display the screen.

Figure 253 TR-098 Amendment 1: LAN Device: IPInterface

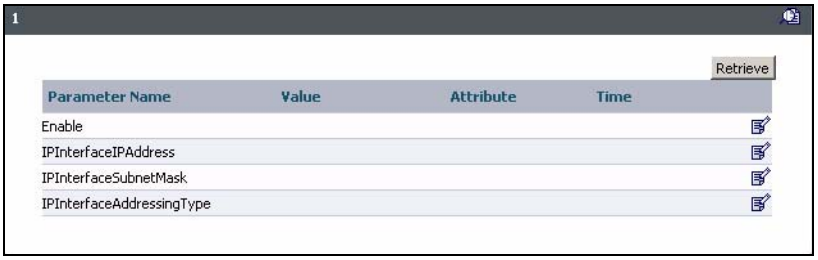


20.2.2 IP Interface Details

Use this screen to view detailed IP interface information.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANHostConfigManagement**.
3. Click **IPInterface** and a number to display the screen.

Figure 254 TR-098 Amendment 1: LAN Device: IPInterface: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 139 TR-098 Amendment 1: LAN Device: IPInterface: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the LAN interface is enabled. **0** means the LAN interface is disabled and no traffic is allowed through.
IPInterfaceIPAddress	This field displays the LAN IP address of the device in dotted decimal notation, for example, 192.168.1.1.

Table 139 TR-098 Amendment 1: LAN Device: IPInterface: Details (continued)

PARAMETER NAME	VALUE
IPInterfaceSubnetMask	This field displays the subnet mask on the LAN. For example, 255.255.255.0.
IPInterfaceAddressingType	This field displays the method to assign IP address on the LAN interface. **DHCP** means the device is set to assign IP address from a DHCP server. **Static** means the device is set to use a fixed IP address configured in the field above. **AutoIP** means the device is set to use the default IP settings on the LAN interface.

20.3 LAN Ethernet Interface

The **LANEthernetInterfaceConfig** screen allows you to view LAN Ethernet settings. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Then click a number and **LANEthernetInterfaceConfig** to display the screen.

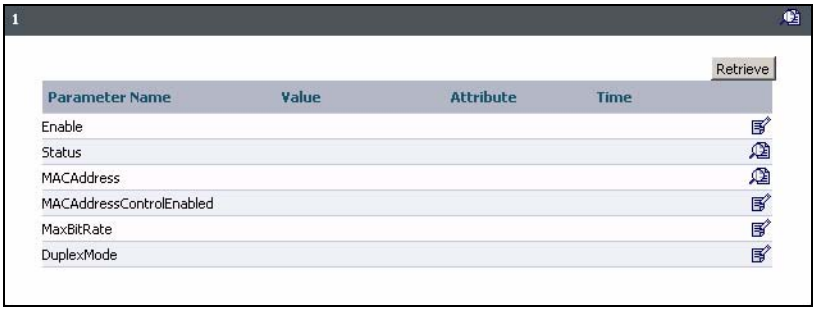
Figure 255 TR-098 Amendment 1: LAN Device: LANEthernetInterfaceConfig

20.3.1 LAN Ethernet Interface Details

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANEthernetInterfaceConfig**.
3. Click a number to display the configuration screen for a LAN Ethernet interface.

Use this screen to enable or disable the LAN Ethernet interface, configure the port speed and duplex mode. You can also use this screen to enable or disable static MAC address learning.

Figure 256 TR-098 Amendment 1: LAN Device: LANEthernetInterfaceConfig: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 140 TR-098 Amendment 1: LAN Device: LANEthernetInterfaceConfig: Details

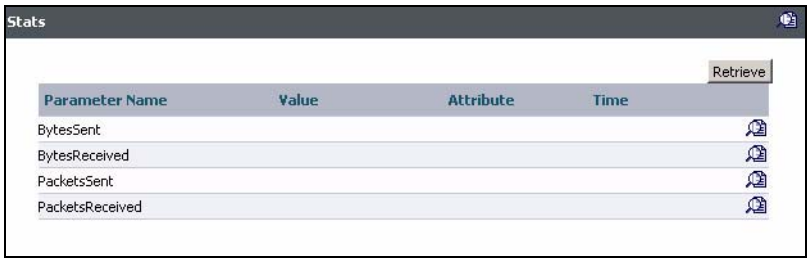
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the LAN Ethernet interface is active. **0** indicates the LAN Ethernet interface is disabled. In this case, no connection is allowed.
Status	This field displays the connection status of the Ethernet interface.
MACAddress	This field displays the MAC address of the Ethernet interface.
MACAddress ControlEnabled	This field displays **1** to indicate that traffic with the specified MAC addresses is allowed on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 20.2 on page 310). This field displays **0** to indicate that MAC address control is disabled. All traffic is allowed through the LAN interface.
MaxBitRate	This field displays the connection speed in megabits per second (Mbps). **Auto** (auto-negotiation) allows the port to negotiate with a peer port automatically to obtain the connection speed that both ends support.
DuplexMode	This field displays the duplex mode for the connection. **Auto** allows the port to negotiate with a peer port automatically to obtain the duplex mode that both ends support.

20.3.2 Ethernet Interface Statistics

The **Stats** screen shows the statistics on the LAN interface.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANEthernetInterfaceConfig**.
3. Click a number and **Stats**.

Figure 257 TR-098 Amendment 1: LAN Device: LANEthernetInterfaceConfig: Stats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 141 TR-098 Amendment 1: LAN Device: LANEthernetInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the number of transmitted bytes on this interface.
BytesReceived	This field displays the number of received bytes on this interface.

Table 141 TR-098 Amendment 1: LAN Device: LANEthernetInterfaceConfig: Stats

PARAMETER NAME	VALUE
PacketsSent	This field displays the number of transmitted packets on this interface.
PacketsReceived	This field displays the number of received packets on this interface.

20.4 LAN USB Interface

The **LANUSBInterfaceConfig** screen is applicable when your device comes with a USB port. Use this screen to view a summary of the USB interface. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Then click a number and **LANUSBInterfaceConfig** to display the screen.

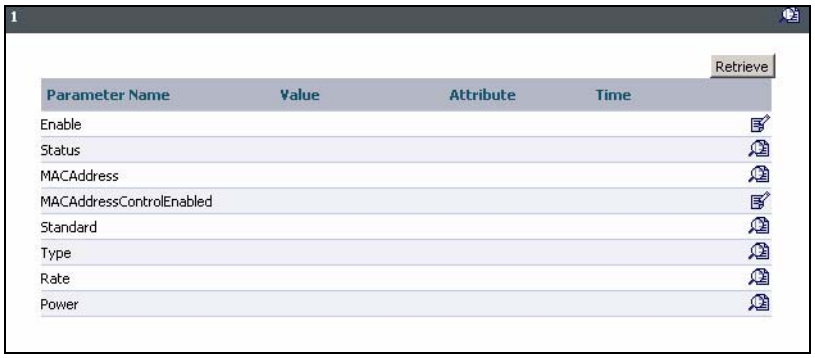
Figure 258 TR-098 Amendment 1: LAN Device: LANUSBInterfaceConfig

20.4.1 LAN USB Interface Details

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **LANUSBInterfaceConfig**.
3. Click a number to display the screen as shown.

Use this screen to activate the USB interface and/or enable MAC address learning control.

Figure 259 TR-098 Amendment 1: LAN Device: LANUSBInterfaceConfig: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 142 TR-098 Amendment 1: LAN Device: LANUSBInterfaceConfig: Details

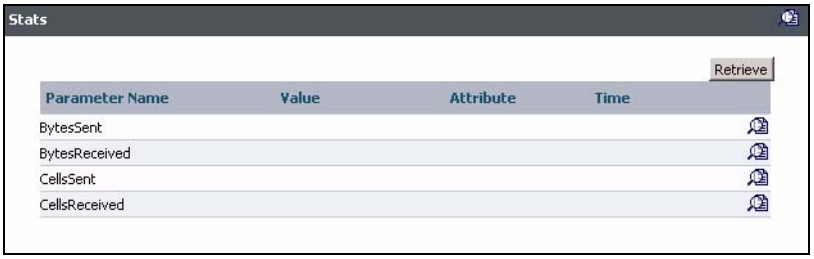
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the USB interface on the LAN is enabled; otherwise, it displays **0**.
Status	This field displays the connection status of the USB interface on the LAN.
MACAddress	This field displays the MAC address of the USB interface on the LAN.
MACAddress ControlEnabled	This field displays **1** to allow traffic with the specified MAC addresses on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 20.2 on page 310). This field displays **0** to indicate that MAC address control is disabled on this port. All traffic is allowed through the USB interface on the LAN.
Standard	This field displays the version of the USB standard supported on the device.
Type	This field displays the type of USB interface on the device.
Rate	This field displays the speed of the USB interface.
Power	This field displays how the USB interface is to obtain power.

20.4.2 USB Interface Statistics

Display the **Stats** screen to view the statistics of the USB interface on the LAN.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Click a number and **LANUSBInterfaceConfig**. Click a number and **Stats** to display the screen as shown.

Figure 260 TR-098 Amendment 1: LAN Device: LANUSBInterfaceConfig: Stats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 143 TR-098 Amendment 1: LAN Device: LANUSBInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the number of transmitted bytes on this interface.
BytesReceived	This field displays the number of received bytes on this interface.
CellsSent	This field displays the number of transmitted cells on this interface.
CellsReceived	This field displays the number of received cells on this interface.

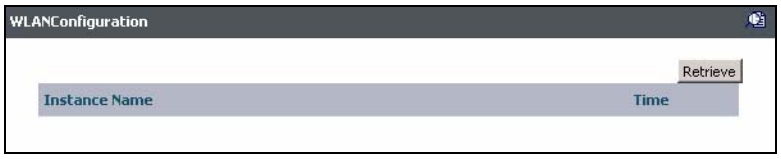
20.5 WLAN Configuration

The settings in the **WLANConfiguration** screen is applicable to a device with built-in wireless capabilities.

Use the **WLANConfiguration** screen to view the number of wireless LAN interfaces on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Click a number and **WLANConfiguration** to display the screen as shown.

Figure 261 TR-098 Amendment 1: LAN Device: WLANConfiguration

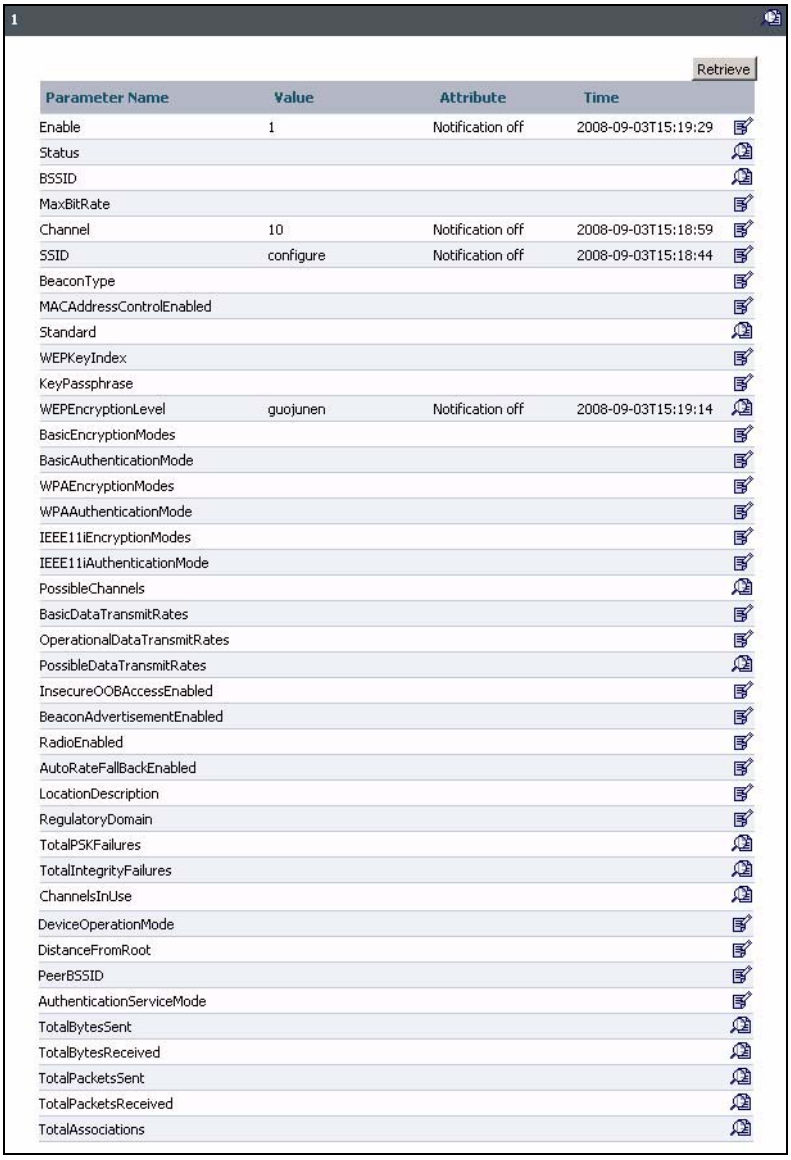


20.5.1 WLAN Configuration Details

The settings in the **WLANConfiguration** screen are applicable to a device with built-in wireless capabilities. Use this configuration screen to view and configure basic wireless LAN settings on the device.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number to display the screen as shown.

Figure 262 TR-098 Amendment 1: LAN Device: WLANConfiguration: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 144 TR-098 Amendment 1: LAN Device: WLANConfiguration

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the WLAN interface is enabled; otherwise, it displays **0**.
Status	This field displays the connection status of the WLAN interface.
BSSID	This field displays identification (usually the MAC address) of the wireless interface.
MaxBitRate	This field displays the maximum bit rate (in Mbps) allowed on the WLAN interface. “auto” means the device automatically uses the highest transmission rate in the **OperationalDataTransmitRates** field.

Table 144 TR-098 Amendment 1: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
Channel	This field displays the wireless channel number (0 to 255) to use for transmission.
SSID	This field displays the name (up to 32 characters) to identify the wireless network.
BeaconType	This field displays the WLAN security mode for wireless transmission. Select **None** to disable wireless security.
MACAddressControlEnabled	This field displays **1** to indicate that traffic with the specified MAC addresses is allowed on this port. You can specify the MAC addresses in the **LANHostConfigManagement** screen (refer to Section 20.2 on page 310). **0** means the MAC address control feature is disabled. All traffic is allowed through the USB interface on the LAN.
Standard	This field displays the wireless standard in which the device is currently operating.
WEPKeyIndex	This field displays the index number (1 - 4) of the WEP key the device is to use for data encryption.
KeyPassphrase	This field displays the passphrase the device uses to generate the WEP keys.
WEPEncryptionLevel	This field displays the wireless encryption level supported on the device.
BasicEncryptionModes	This field is applicable when you select a basic security option for the **BeaconType** field. **WEPEncryption** means the device is set to use basic WEP encryption for wireless transmission. **None** means WEP encryption is disabled. In this case, traffic sent through the wireless network is not secure.
BasicAuthenticationMode	This field is applicable when you select a basic security option in the **BeaconType** field. **EAPAuthentication** enables user authentication before wireless connection is allowed for the WLAN clients. **None** deactivates this feature. In this case, your wireless network may be accessible by anyone.
WPAEncryptionModes	This field is applicable when you select a WPA security option in the **BeaconType** field. This field displays the encryption method to secure traffic over the wireless network.
WPAAuthenticationMode	This field is applicable when you select a WPA security option in the **BeaconType** field. This field displays the authentication method to control access to your wireless network.
IEEE11iEncryptionModes	This field is applicable when you select an 11i security option in the **BeaconType** field. This field displays the encryption method to secure traffic over the wireless network.
IEEE11iAuthenticationMode	This field is applicable when you select an 11i security option in the **BeaconType** field. This field displays the authentication method to control access to your wireless network.
PossibleChannels	This field displays wireless channels available for your device as defined by the regulatory body.

Table 144 TR-098 Amendment 1: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
BasicDataTransmitRates	This field displays the wireless transmission rate (Mbps) for broadcast, multicast and unicast frames on the device. Multiple transmission rates are separated by commas (,). For example, “1,2” means the device is able to send at 1 Mbps or 2 Mbps.
OperationalDataTransmitRates	This field displays the maximum transmission rate (in Mbps) allowed for unicast frames on the device. Multiple transmission rates are separated by commas (,). For example, if the **BasicDataTransmitRates** field is “1,2” and this field is “1,2,5.5,11”, then the device can transmit unicast frames at the maximum rates of 5.5 Mbps or 11 Mbps.
PossibleDataTransmitRates	This field displays the transmission rates for unicast frames WLAN clients are allowed when connected to the device. For example, if this field displays “1,2,5.5”. This means that the device allows a wireless connection of up to 5.5 Mbps even though it is capable of connecting at 11 Mbps.
InsecureOOBAccessEnabled	This field displays **1** to indicate that configuration changes are allowed to send through insecure management methods other than the WAN CPE Management Protocol. **0** disables this feature.
BeaconAdvertisementEnabled	This field displays **1** to indicate that the device is set to send beacons to advertise its presence; otherwise, this field is **0**.
RadioEnabled	This field display **1** to indicate that the wireless transmission is allowed on the device; otherwise, this field displays **0**.
AutoRateFallBackEnabled	This field displays **1** to indicate that the device is set to automatically reduce wireless transmission rates due to noise or contention. **0** deactivates this feature.
LocationDescription	This field displays the location of the device for identification purposes.
RegulatoryDomain	This field displays the name of the regulatory body in your geographical area. The first two characters are the country code as defined in ISO/IEC 3166-1. For the third character, “ “ means all environment, “I” means inside and “O” means outside.
TotalPSKFailures	This field is applicable for WPA and 802.11i authentication methods. This field displays the number of times pre-shared key authentication has failed.
TotalIntegrityFailures	This field is applicable for WPA and 802.11i authentication methods. This field displays the number of times MICHEAL integrity check has failed.
ChannelsInUse	This field displays the channel number(s) that is currently used on the device for wireless transmission.
DeviceOperationMode	This field displays the wireless operation mode for the device.
DistanceFromRoot	This field displays the number of hops between this device and the wireless bridge/repeater.
PeerBSSID	This field displays the MAC address of the peer wireless bridge/repeater.
AuthenticationServiceMode	If user authentication is enabled, this field displays the location of the user database the device is to check.
TotalBytesSent	This field displays the number of transmitted bytes on this interface.
TotalBytesReceived	This field displays the number of received bytes on this interface.

Table 144 TR-098 Amendment 1: LAN Device: WLANConfiguration (continued)

PARAMETER NAME	VALUE
TotalPacketsSent	This field displays the number of transmitted packets on this interface.
TotalPacketsReceived	This field displays the number of received packets on this interface.
TotalAssociations	This field displays the number of wireless clients associated to this device.

20.6 WLAN Association List

The **AssociatedDevice** screen displays a list of WLAN devices that are currently connected to the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **AssociatedDevice** to display the screen as shown.

Figure 263 TR-098 Amendment 1: LAN Device: WLANConfiguration:AssociatedDevice

20.6.1 WLAN Association List Details

Display the **AssociatedDevice** screen to view information on a wireless client currently connected to the device.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **AssociatedDevice**.
4. Click a number to display the screen as shown.

Figure 264 TR-098 Amendment 1: LAN Device: WLANConfiguration: AssociatedDevice

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 145 TR-098 Amendment 1: LAN Device: WLANConfiguration: AssociatedDevice

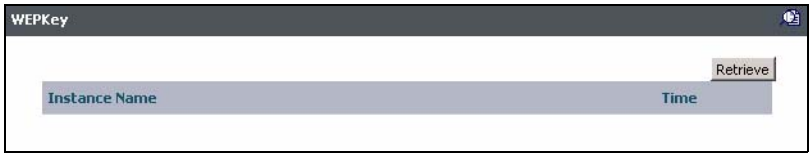
LABEL	DESCRIPTION
AssociatedDeviceMACAddress	This field displays the MAC address of an associated device.
AssociatedDeviceIPAddress	This field displays the IP address or domain name of an associated device.
AssociatedDeviceAuthenticationState	This field displays whether the associated device is authenticated (**Enable**) or not (**Disable**).
LastRequestedUnicastCipher	This field is applicable for 802.11i authentication methods. This field displays the last unicast cipher used for a device with the specified MAC address.
LastRequestedMulticastCipher	This field is applicable for 802.11i authentication methods. This field displays the last multicast cipher used for a device with the specified MAC address.
LastPMKId	This field is applicable for 802.11i authentication methods. This field displays the last pairwise master key used for a device with the specified MAC address.

20.7 WEP Key

Use the **WEPKey** screen to view the WEP key object information. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **WEPKey** to display the screen as shown.

Figure 265 TR-098 Amendment 1: LAN Device: WLANConfiguration: WEPKey



20.7.1 WEP Key Details

Use this configuration screen to view and set up WEP encryption keys for secure wireless communication on the device.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **WEPKey**.
4. Click a number to display the screen as shown.

Figure 266 TR-098 Amendment 1: LAN Device: WLANConfiguration: WEPKey: Details

The **WEPKey** field displays the WEP key content. Depending on the encryption level in the **WEPEncryptionLevel** field in the **WLANConfiguration** screen, the key length varies.

For 40-bit encryption level, this field displays 10 hexadecimal characters (“0-9”, “a-z”, “A-F”). For 104-bit encryption level, this field displays 26 hexadecimal characters (“0-9”, “a-z”, “A-F”). The WEP key content is not sent when requested. An empty string is returned.

Refer to Section 11.2.4 on page 132 for other field descriptions.

20.8 Pre-shared Key

Use the **PreSharedKey** screen to view the pre-shared key information. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **PreSharedKey** to display the screen as shown.

Figure 267 TR-098 Amendment 1: LAN Device: WLANConfiguration: PreSharedKey

20.8.1 Pre-shared Key Details

Use the detailed **PreSharedKey** screen to configure the passphrase the device uses to generate the pre-shared key and/or WEP keys automatically.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **WLANConfiguration**.
3. Click a number and **PreSharedKey**.
4. Click a number to display the screen as shown.

Figure 268 TR-098 Amendment 1: LAN Device: WLANConfiguration: PreSharedKey: Details

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 146 TR-098 Amendment 1: LAN Device: WLANConfiguration: PreSharedKey: Details

PARAMETER NAME	VALUE
PreSharedKey	This field displays a pre-shared key for WPA security.
KeyPassphrase	This field displays the passphrase the device uses to generate a pre-shared key or WEP key based.
AssociatedDeviceMACAddress	This field displays the MAC address of a wireless client associated to this key.

20.9 LAN Hosts

In the **Hosts** screen, you can view the number of LAN hosts that are assigned a dynamic or static IP address by the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**. Click a number and **Hosts** to display the screen.

Figure 269 TR-098 Amendment 1: LAN Device: Hosts

20.9.1 LAN Host Table

Display the **Host** screen to view the host table name. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **Hosts**.
3. Click **Host** to display the screen.

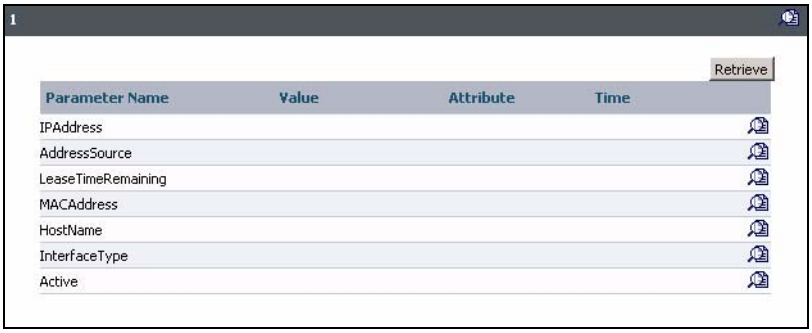
Figure 270 TR-098 Amendment 1: LAN Device: Hosts: Host

20.9.2 LAN Host Table Details

Display the detailed Host screen to view or configure DHCP host settings (such as IP address, lease time, etc.).

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **LANDevice**.
2. Click a number and **Hosts**.
3. Click **Host** and a number to display the screen.

Figure 271 TR-098 Amendment 1: LAN Device: Hosts: Host: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 147 TR-098 Amendment 1: LAN Device: Hosts: Host: Details

PARAMETER NAME	VALUE
IPAddress	This field displays the IP address assigned to the LAN host.
AddressSource	This field indicates whether the LAN host obtains the IP address statically (**Static**), dynamically from the device (**DHCP**) or through automatic assignment (**Auto**).
LeaseTimeRemaining	If the host IP address is assigned through DHCP, this field displays the lease time remaining (in seconds). A value of -1 means that the lease never times out. This field displays zero if the IP address assignment is not through DHCP.
MACAddress	This field displays the MAC address of the LAN host.
HostName	This field displays the name of the LAN host.
InterfaceType	This field displays the name of the interface the LAN host uses to connect to the device.
Active	This field is **Enabled** to indicate that the LAN host is currently present in the network. Otherwise, this field is **Disable**.

21

WAN Device

This chapter describes the screens you use to configure and view WAN settings.

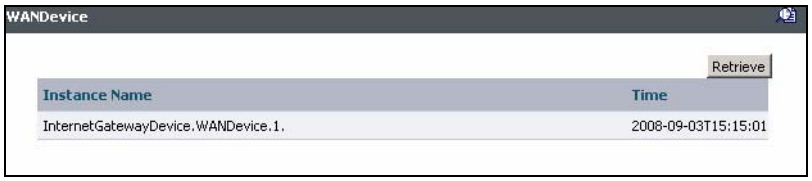
21.1 WAN Device Screen Overview

Use the WAN Device screens to configure or view the WAN interface settings on the selected device. The number of screens and field labels available vary depending on your device model.

The **WANDevice** screen displays the number of connected WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice.**

Figure 272 TR-098 Amendment 1: WANDevice



21.1.1 WAN Device Details

To view the number of WAN connections, select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice and then click an index.**

The value for the **WANConnectionNumberOfEntries** displays the number of connections on the WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions.

Figure 273 TR-098 Amendment 1: WANDevice: Details

21.2 WAN Common Interface Configuration

You can view basic common connection status in the **WANCommonInterfaceConfig** screen.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANCommonInterfaceConfig** to display the screen.

Figure 274 TR-098 Amendment 1: WAN Device: WANCommonInterfaceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 148 TR-098 Amendment 1: WAN Device: WANCommonInterfaceConfig

PARAMETER NAME	VALUE
EnabledForInternet	This field displays **1** to indicate that the WAN interface is enabled for Internet access; otherwise, the field displays **0**.
WANAccessType	This field displays the type of connection for Internet access on the WAN interface.
Layer1UpstreamMaxBitRate	This field displays the maximum upstream transmission rate in bits per second.
Layer1DownstreamMaxBitRate	This field displays the maximum download transmission rate in bits per second.
PhysicalLinkStatus	This field displays the link status. Possible states are **Up**, **Down**, **Initializing** and **Unavailable**.
WANAccessProvider	This field displays the name of the ISP providing the Internet access service.
TotalBytesSent	This field displays the total number of bytes transmitted.
TotalBytesReceived	This field displays the total number of bytes received.
TotalPacketsSent	This field displays the total number of packets transmitted.
TotalPacketsReceived	This field displays the total number of packets received.
MaximumActiveConnections	This field displays the maximum number of connections allowed on the device for Internet access.
NumberOfActiveConnections	This field displays the number of active connections on the device for Internet access.

21.2.1 Connection

Use the **Connection** screen to view the Internet connection instance. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANCommonInterfaceConfig**.
3. Click **Connection** to display the screen.

Figure 275 TR-098 Amendment 1: WAN Device: WANCommonInterfaceConfig: Connection

21.2.2 Connection Setup

Use the **Connection** screen to configure general connection settings.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANCommonInterfaceConfig**.
3. Click **Connection** and a number to display the screen.

Figure 276 TR-098 Amendment 1: WAN Device: WANCommonInterfaceConfig: Connection: Setup

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 149 TR-098 Amendment 1: WAN Device: WANCommonInterfaceConfig: Connection: Setup

PARAMETER NAME	VALUE
ActiveConnectionDeviceContainer	This field displays the hierarchical name of the WAN interface associated with the connection. For example, “InternetGatewayDevice.WANDevice.1.-WANConnectionDevice.1.WANPPPConnection.1”
ActiveConnectionServiceID	This field displays the hierarchical name of the interface object for this connection.

21.3 WAN DSL Interface Configuration

Use the **WANDSLInterfaceConfig** to configure the DSL connection for Internet access. DSL connection setup is independent of other WAN interface parameter settings.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANDSLInterfaceConfig** to display the screen.

Figure 277 TR-098 Amendment 1: WAN Device: WANDSLInterfaceConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 150 TR-098 Amendment 1: WAN Device: WANDSLInterfaceConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the link is active; otherwise, it displays **0**.
Status	This field displays the link status.
ModulationType	This field displays the modulation method used on the link.
LineEncoding	This field displays the line encoding method used to establish a connection to the ISP.
DataPath	This field displays whether the link uses fast (lower latency) or interleave (lower error rate) data path.

Table 150 TR-098 Amendment 1: WAN Device: WANDSLInterfaceConfig (continued)

PARAMETER NAME	VALUE
InterleaveDepth	This field is applicable when the **DataPath** field shows **Interleave**. This field displays the interleaved depth.
LineNumber	This field displays the number of the line pair used for the connection. For example, 1 means the inner most pair.
UpstreamCurrRate	This field displays the current payload bandwidth (in kbps) of the upstream DSL channel.
DownstreamCurrRate	This field displays the current payload bandwidth (in kbps) of the downstream DSL channel.
UpstreamMaxRate	This field displays the attainable bandwidth (in kbps) for the upstream DSL channel.
DownstreamMaxRate	This field displays the attainable bandwidth (in kbps) for the downstream DSL channel.
UpstreamNoiseMargin	This field displays the current upstream Noise-to-Signal ratio (in 0.1 dB) for the upstream DSL channel.
DownstreamNoiseMargin	This field displays the current upstream Noise-to-Signal ratio (in 0.1 dB) for the downstream DSL channel.
UpstreamAttenuation	This field displays the current upstream signal loss (in 0.1 dB).
DownstreamAttenuation	This field displays the current downstream signal loss (in 0.1 dB).
UpstreamPower	This field displays the output power (in 0.1dBmV).
DownstreamPower	This field displays the received power (in 0.1dBmV).
ATURVendor	This field displays the ATU-R vendor identifier.
ATURCountry	This field displays the ATU-R country code.
ATURANSIStd	This field displays the ATU-R T1.413 version number.
ATURANSIRev	This field displays the ATU-R vendor revision number.
ATUCVendor	This field displays the ATU-C vendor identifier.
ATUCCountry	This field displays the ATU-C country code.
ATUCANSIStd	This field displays the ATU-C T1.413 version number.
ATUCANSIRev	This field displays the ATU-C vendor revision number.
TotalStart	This field displays the number of seconds that elapsed since statistics information collection started.
ShowtimeStart	This field displays the number of seconds since the beginning of the period used for collecting first ShowTime statistics.
LastShowtimeStart	This field displays the number of seconds since the beginning of the second most recent period used for collecting the ShowTime statistics.
CurrentDayStart	This field displays the number of seconds since the beginning of the period used for collecting CurrentDayStart statistics.
QuarterHourStart	This field displays the number of seconds since the beginning of the period used for collecting QuarterHour statistics.

21.3.1 WAN DSL Line Statistics

Use the **Stats** screen to view the DSL connection statistics instance. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLInterfaceConfig**.
3. Click **Stats**.

21.3.2 WAN DSL Line Statistics Details

You can view the line statistics in the **Stats** screens. The following statistics screens are available. Field labels are the same in all the screens.

- **Total**: This screen displays the statistics with the totals.
- **Showtime**: This screen displays the statistics since the most recent DSL Showtime.
- **LastShowtime**: This screen displays the statistics since the second most recent DSL Showtime.
- **CurrentDay**: This screen displays the statistics accumulated during the current day.
- **QuaterHour**: This screen displays the statistics accumulated during the current 15 minutes.

Follow the steps below to display a statistics screen.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLInterfaceConfig**.
3. Click **Stats** and click on the type of statistics you want to see.

Figure 278 TR-098 Amendment 1: WAN Device: WANDSLInterfaceConfig: Stats (Total)

The following table describes the labels in this screen.Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 151 TR-098 Amendment 1: WAN Device: WANDSLInterfaceConfig: Stats (Total)

PARAMETER NAME	VALUE
ReceiveBlocks	This field displays the number of blocks received.
TransmitBlocks	This field displays the number of blocks sent.

Table 151 TR-098 Amendment 1: WAN Device: WANDSLInterfaceConfig: Stats (Total)

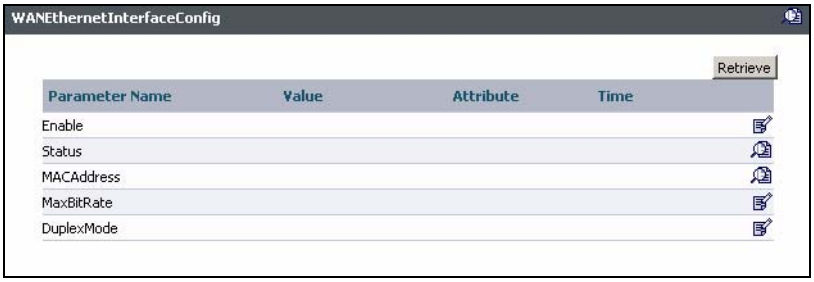
PARAMETER NAME	VALUE
CellDelin	This field displays the number of cell-delineation errors.
LinkRetrain	This field displays the number to link retrain errors.
InitErrors	This field displays the number of initialization errors.
InitTimeouts	This field displays the number of initialization timeout errors.
LossOfFraming	This field displays the number of Loss Of Framing errors.
ErroredSecs	This field displays the number of Errored Seconds.
SeverelyErroredSecs	This field displays the number of Severely Errored Seconds.
FECErrors	This field displays the number of FEC errors.
ATUCFECErrors	This field displays the number of FEC errors detected by the ATU-C.
HECErrors	This field displays the number of HEC errors.
ATUCHECErrors	This field displays the number of HEC errors detected by the ATU-C.
CRCErrors	This field displays the number of CRC errors.
ATUCCRCErrors	This field displays the number of CRC errors detected by the ATU-C.

21.4 WAN Ethernet Interface Configuration

You can set the Ethernet settings on the WAN interface in the **WANEthernetInterfaceConfig** screen.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANEthernetInterfaceConfig** to display the screen.

Figure 279 TR-098 Amendment 1: WAN Device: WANEthernetInterfaceConfig



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 152 TR-098 Amendment 1: WAN Device: WANEthernetInterfaceConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this interface is active; otherwise, it displays **0**.
Status	This field displays the status of this interface.
MACAddress	This field displays the MAC address of the interface.

Table 152 TR-098 Amendment 1: WAN Device: WANEthernetInterfaceConfig (continued)

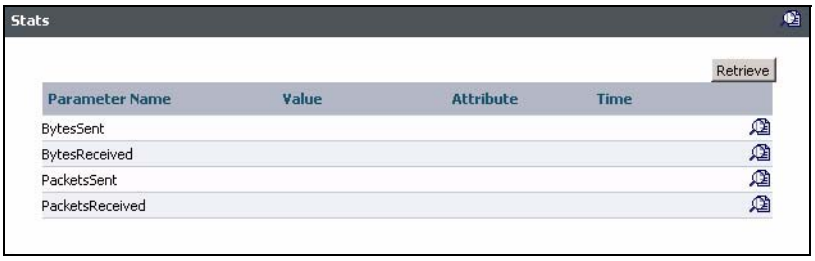
PARAMETER NAME	VALUE
MaxBitRate	This field displays the maximum link speed (**10**, **100** or **Auto**) on the interface.
DuplexMode	This field displays the duplex mode (**Half**, **Full** or **Auto**) for the interface.

21.4.1 WAN Ethernet Statistics

View the statistics for the WAN interface in the **Stats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number **WANEthernetInterfaceConfig**.
3. Click **Stats** to display the statistics screen.

Figure 280 TR-098 Amendment 1: WAN Device: WANEthernetInterfaceConfig: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 153 TR-098 Amendment 1: WAN Device: WANEthernetInterfaceConfig: Stats

PARAMETER NAME	VALUE
BytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
BytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
PacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
PacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

21.5 WAN DSL Connection Management

The **WANDSLConnectionManagement** screen displays the number of WAN connection services on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANDSLConnectionManagement** to display the screen.

Figure 281 TR-098 Amendment 1: WAN Device: WANDSLConnectionManagement

21.6 WAN DSL Connection Service Information

You can view a list of connection service instances in the **ConnectionService** screen.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLConnectionManagement**.
3. Click **ConnectionService** to display the screen.

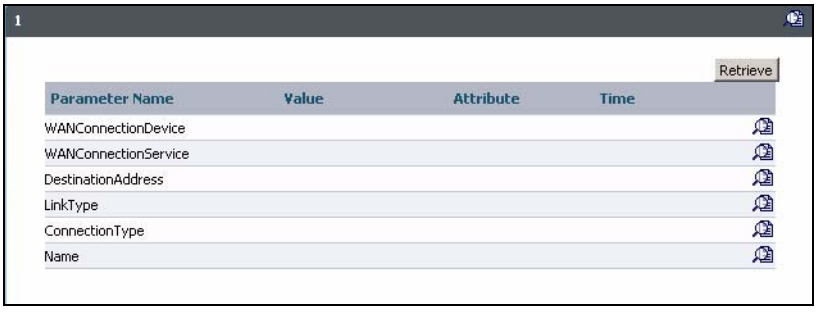
Figure 282 TR-098 Amendment 1: WAN Device: ConnectionService

21.6.1 WAN DSL Connection Service Setup

You can view and configure WAN DSL connection service settings in the **ConnectionService** screen.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANDSLConnectionManagement**.
3. Click **ConnectionService** and a number to display the screen.

Figure 283 TR-098 Amendment 1: WAN Device: ConnectionService: Setup



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 154 TR-098 Amendment 1: WAN Device: ConnectionService: Setup

PARAMETER NAME	VALUE
WANConnectionDevice	This field displays the hierarchical name of the WAN connection device object associated with the connection. For example, “InternetGatewayDevice.WANDevice.1.WANConnectionDevice.2”
WANConnectionService	This field displays the hierarchical name of the WAN connection device object associated with the connection service. For example, “InternetGatewayDevice.WANDevice.1.WANConnectionDevice.2.WANPPPConnection.1”.
DestinationAddress	This field shows the destination address of the connection. The address displayed varies depending on the connection type. This field displays VCI/VPI for a PVC connection. This field displays an ATM connection name or ATM address for an SVC connection.
LinkType	This field displays the type of the link.
ConnectionType	This field displays the name of the connection type.
Name	This field displays the descriptive name for this connection.

21.7 WAN DSL Diagnostics

You can view the DSL connection diagnostics data in the **WANDSLDiagnostics** screen.

Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANDSLDiagnostics** to display the screen as shown.

Figure 284 TR-098 Amendment 1: WAN Device: WANDSLDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 155 TR-098 Amendment 1: WAN Device: WANDSLDiagnostics

PARAMETER NAME	VALUE
LoopDiagnosticsState	This field displays the availability of the link diagnostic test result. **Requested** indicates a test is to be initialized.
ACTPSDds	This field displays the actual power spectral density for the downstream traffic.
ACTPSDus	This field displays the actual power spectral density for the upstream traffic.
ACTATPds	This field displays the actual aggregate transmitter power for the downstream traffic.
ACTATPus	This field displays the actual aggregate transmitter power for the upstream traffic.
HLINSCds	This field displays the linear representation scale for the downstream traffic.
HLINpsds	This field displays the linear channel characteristics per subcarrier for the upstream traffic.
QLNpsds	This field displays the quiet line noise per subcarrier for the downstream traffic in comma-separated list of numbers. Maximum list of numbers is 256 for an ADSL/ADSL2 connection and 512 for an ADSL2+ connection.
SNRpsds	This field displays the Signal-to-Noise ratio per subcarrier for the downstream traffic.
BITSpsds	This field displays the bit allocation per subcarrier for the downstream traffic.
GAINSpsds	This field displays the gain allocation per subcarrier for the downstream traffic.

21.8 WAN Connection Device

For DSL connections, you can view the connection instances associated to an ATM VC in the **WANConnectionDevice** screen.

Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**. Click a number and **WANConnectionDevice** to display the screen as shown.

Figure 285 TR-098 Amendment 1: WAN Device: WANConnectionDevice

21.9 WAN Connection Device Details

You can view the number of connection instances associated to WAN connection device in the detailed **WANConnectionDevice** screen.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.

3 Click on an index to display the screen as shown.

Figure 286 TR-098 Amendment 1: WAN Device: WANConnectionDevice: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 156 TR-098 Amendment 1: WAN Device: WANConnectionDevice: Details

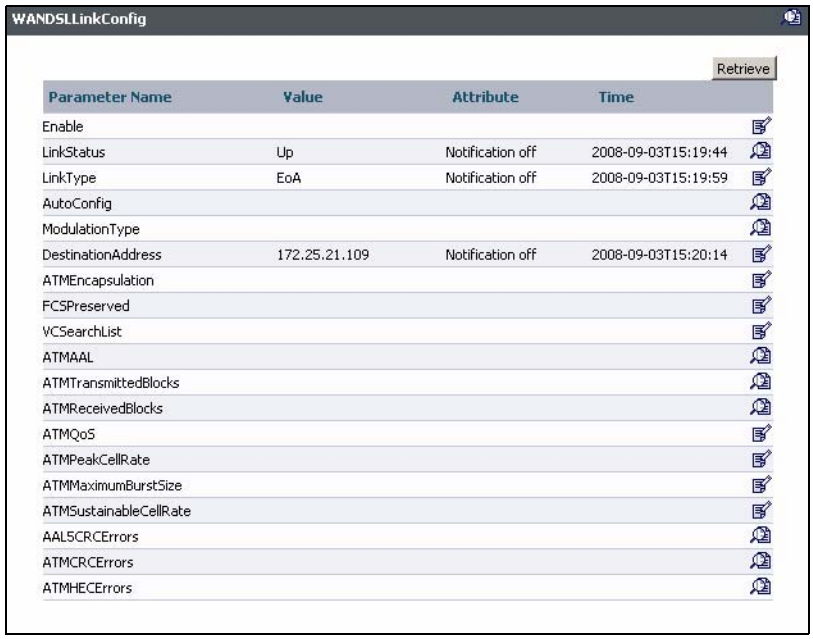
PARAMETER NAME	VALUE
WANIPConnectionNumberOfEntries	This field displays the number of WANIPConnection entries associated to the WANConnectionDevice.
WANPPPConnectionNumberOfEntries	This field displays the number of WANPPPConnection entries associated to the WANConnectionDevice.

21.9.1 WAN DSL Link Configuration

Use the **WANDSLLinkConfig** screen to set the ATM layer properties for the physical DSL connection.

1 Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2 Click a number and **WANConnectionDevice**.
3 Cick a number and **WANDSLLinkConfig** to display the screen as shown.

Figure 287 TR-098 Amendment 1: WAN Device: WANDSLLinkConfig



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 157 TR-098 Amendment 1: WAN Device: WANDSLLinkConfig

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the DSL link is active; otherwise, this field displays **0**.
LinkStatus	This field displays the link status (**Up**, **Down**, **Initializing** or **Unavailable**).
LinkType	This field displays the type for this DSL link. **EoA** sets the device to use the bridged Ethernet over ATM (RFC2684) link type. **IPoA** sets the device to use the routed IP over ATM (RFC2684) link type. **PPPoA** sets the device to use the PPP over ATM (RFC2364) link type. **PPPoE** sets the device to use the PPP over Ethernet on bridged Ethernet over ATM (RFC2516, RFC2684) link type. **CIP** sets the device to use the Classical IP over ATM (RFC1577) link type. **Unconfigured** means an unknown link type.
AutoConfig	This field displays whether the auto-configuration feature is enabled or disabled for this DSL link.
ModulationType	This field displays the type of modulation used on the interface associated to this DSL link.
DestinationAddress	This field displays the destination address for the DSL link. The type of address you enter varies depending on the connection type. This field displays the VCI/VPI for a PVC connection. This field displays an ATM connection name or ATM address for an SVC connection.
ATMEncapsulation	This field displays the encapsulation (**LLC** or **VCMUX**) to use for this DSL link.
FCSPreserved	This field displays **1** to include a checksum in the ATM payload for error correction. **0** means the checksum is not included in the ATM payload. No error correction is available.
VCSearchList	This field displays the VCI/VPI number pairs (separated by a comma) the link uses to establish a connection if the destination address specified cannot be reached.
ATMAAL	This field displays the ATM Adaptation Layer (AAL) the link uses.
ATMTransmittedBlocks	This field displays the number of ATM blocks transmitted successfully.
ATMReceivedBlocks	This field displays the number of ATM blocks received successfully.
ATMQoS	Select the ATM Quality of Service (QoS) method to use on this link.
ATMPeakCellRate	This field displays the peak cell rate (between 0 and 4294967295) for the upstream traffic in cells per second.
ATMMaximumBurstSize	This field displays the maximum burst rate (between 0 and 4294967295) for the upstream traffic in cells.
ATMSustainableCellRate	This field displays the sustainable cell rate (between 0 and 4294967295) for the upstream traffic in cells per second. This value is used for traffic shaping.
AAL5CRCErrors	This field displays the number of AAL5 layer cyclic redundancy check errors.

Table 157 TR-098 Amendment 1: WAN Device: WANDSLLinkConfig (continued)

PARAMETER NAME	VALUE
ATMCRCErrors	This field displays the number of ATM layer cyclic redundancy check errors.
ATMHECErrors	This field displays the number of Header Error Check related errors at the ATM layer.

21.10 WAN ATM F5 Loopback Diagnostics

Use the **WANATMF5LoopbackDiagnostics** screen to view loopback diagnostic (ping) test results and to configure timeout settings for the ping test on the ATM layer.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANATMF5LoopbackDiagnostics** to display the screen as shown.

Figure 288 TR-098 Amendment 1: WAN Device: WANATMF5LoopbackDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 158 TR-098 Amendment 1: WAN Device: WANATMF5LoopbackDiagnostics

PARAMETER NAME	VALUE
DiagnosticsState	This field displays the availability of the ping test result. **Requested** means a test is to be initiated.
NumberOfRepetitions	This field displays the number of ping tests (between 1 and 4294967295) to perform before displaying the test results.
Timeout	This field displays the timeout (between 1 and 4294967295 milliseconds) for the ping test.
SuccessCount	This field displays the number of pings that received a successful response within the timeout in the most recent ping test.
FailureCount	This field displays the number of pings that failed to receive a successful response within the timeout in the most recent ping test.
AverageResponseTime	This field displays the average response time (in milliseconds) of all pings that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.

Table 158 TR-098 Amendment 1: WAN Device: WANATMF5LoopbackDiagnostics

PARAMETER NAME	VALUE
MinimumResponseTime	This field displays the minimum response time (in milliseconds) of the ping that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.
MaximumResponseTime	This field displays the maximum response time (in milliseconds) of the ping that received a successful response in the most recent ping test. If there is no successful response from the ping test, this field displays zero.

21.11 WAN Ethernet Link Configuration

The **WANEthernetLinkConfig** screen displays the Ethernet link status (**Up**, **Down** or **Unavailable**) in the **EthernetLinkStatus** field. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANEthernetLinkConfig** to display the screen as shown.

Figure 289 TR-098 Amendment 1: WAN Device: WANEthernetLinkConfig

21.12 WAN POTS Link Configuration

You can view the WAN POTS connection status in the **WANPOTSLinkConfig** screen. The POST connection is used for dialing to the ISP for Internet access.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPOTSLinkConfig** to display the screen as shown.

Figure 290 TR-098 Amendment 1: WAN Device: WANPOTSLinkConfig

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 159 TR-098 Amendment 1: WAN Device: WANPOTSLinkConfig

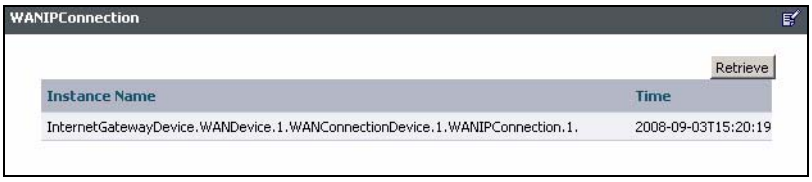
PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that the POTS link is active; otherwise it displays **0**.
LinkStatus	This field displays the link status (**Up**, **Down**, **Dialing**, **Connecting** or **Unavailable**).
ISPPhoneNumber	This field displays the phone number (up to 64 digits in countrycode-areacode-phone number format) to dial to connect to the ISP. For example, +86-10-62618501. Multiple phone numbers are separated with a colon (:).
ISPInfo	This field displays a descriptive name (up to 64 characters) to identify this ISP.
LinkType	The default link type is **PPP_Dialup**.
NumberOfRetries	This field displays the number of times (between 0 and 4294967295) the CPE device is to re-dial for Internet connection.
DelayBetweenRetries	This field displays the time (in milliseconds) the CPE device is to wait before attempting to connect to the ISP again.
Fclass	This field indicates the transmission functions the CPE device is capable of. 0:data 1, 2, 2.0: fax 8: voice 80: DSVD
DataModulationSupported	This field displays the modulation method(s) supported for data transfer.
DataProtocol	This field displays the protocol(s) supported for data transfer.
DataCompression	This field displays the compression method used for data transfer.
PlusVTRCommandSupported	This field indicates whether full-duplex mode is activated on the link or not.

21.13 WAN IP Connection

You can view the IP settings for the WAN connection in the **WANIPConnection** screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection** to display the screen as shown.

Figure 291 TR-098 Amendment 1: WAN Device: WANIPConnection



21.13.1 WAN IP Connection Details

You can configure and view basic IP settings for the WAN IP connection in the detailed **WANIPConnection** screen.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number to display the screen as shown.

Figure 292 TR-098 Amendment 1: WAN Device: WANIPConnection: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 160 TR-098 Amendment 1: WAN Device: WANIPConnection: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this link is active; otherwise this field displays **0**.
ConnectionStatus	This field displays the link status (**Unconfigured**, **Connecting**, **Connected**, **PendingDisconnect**, **Disconnecting**, **Disconnected**).
PossibleConnectionTypes	This field displays the connection type(s) this link supports.
ConnectionType	This field displays the connection type for this link.
Name	This field displays a descriptive name (up to 256 characters) for this link.
Uptime	This field displays the number of seconds the link has been up.
LastConnectionError	This field displays the cause for the last failed connection attempt.
AutoDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) the device is to wait before disconnecting the link.
IdleDisconnectTime	This field displays the inactivity timeout in seconds (between 0 and 4294967295) for a link. When the time is reached without any network activity through the link, the device automatically disconnect the link.
WarnDisconnectDelay	This field displays the number of seconds (between 0 and 4294967295) before the device disconnects the link.

Table 160 TR-098 Amendment 1: WAN Device: WANIPConnection: Details (continued)

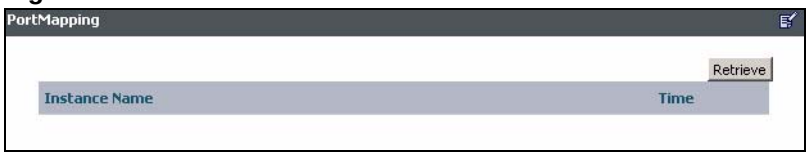
PARAMETER NAME	VALUE
RSIPAvailable	This field displays whether the Realm-specific IP (RSIP) feature is supported on the device.
NATEnabled	This field displays **1** to indicate that the NAT (Network Address Translation) feature is enabled for this link; otherwise the field displays **0**.
AddressingType	This field displays **DHCP** to set the device to obtain a dynamic IP address from the ISP for this link on the WAN. This field displays **Static** to set the link to use a fixed WAN IP address. Then configure the fields below.
ExternalIPAddress	This field is applicable when you select **Static** in the **AddressingType** field.
SubnetMask	This field is applicable when you select **Static** in the **AddressingType** field.
DefaultGateway	This field is applicable when you select **Static** in the **AddressingType** field.
DNSEnabled	This field displays whether is the device to resolve domain names through this link.
DNSOverrideAllowed	This field displays **1** when a non-empty DNS address is to be replaced by a DNS entry received on the WAN; otherwise, this field is **0**.
DNSServers	This field displays the IP address(es) of the DNS server(s). Multiple IP addresses are separated by a comma.
MaxMTUSize	This field displays the maximum size (between 1 and 1540) for the Ethernet frames allowed on this link.
MACAddress	This field is applicable when you select **Enable** in the **MACAddressOverride** field. This field displays the MAC address on this link.
MACAddressOverride	This field displays **1** to change the MAC address of this interface in the **MACAddress** field. This field is **0** if you do not allow MAC address modification.
ConnectionTrigger	This field displays how the device will establish a connection for Internet access. Choices are **AlwaysOn**, **OnDemand** and **Manual**.
RouteProtocolRx	This field displays the routing protocol (**RIP1**, **RIP2** or **OSPF**) the link is to use. **Off** means the routing feature is disabled.
ShapingRate	This field displays the rate (in bits per second) the device shapes the outgoing traffic to.
ShapingBurstSize	This field displays the burst size (in bytes) for traffic shaping.
PortMappingNumberOfEntries	This field displays the number of port mappings on this link.

21.13.2 Port Mapping Table

Use the **PortMapping** screen to view the port mapping instance for the WAN IP connection. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number and **PortMapping** to display the screen as shown.

Figure 293 TR-098 Amendment 1: WAN Device: WANIPConnection: PortMapping

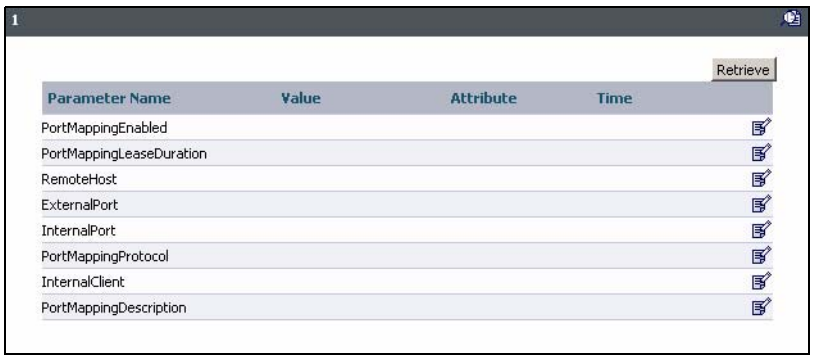


21.13.3 Port Mapping Table Details

Use the detailed **PortMapping** screen to configure the port mapping settings for the WAN IP connection.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number and **PortMapping**.
5. Click a number to display the screen as shown.

Figure 294 TR-098 Amendment 1: WAN Device: WANIPConnection: PortMapping: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 161 TR-098 Amendment 1: WAN Device: WANIPConnection: PortMapping: Details

PARAMETER NAME	VALUE
PortMappingEnabled	This field displays **1** to indicate that the port mapping entry on this link is enabled; otherwise this field displays **0**.
PortMappingLeaseDuration	This field displays the time (between 1 to 4294967295 seconds) the device stores the port mapping entry. After this, the entry is removed from the port mapping table. 0 means that a port mapping entry is static and cannot be removed from the port mapping table.
RemoteHost	This field displays the IP address of the remote host device. If this field is blank, it indicates a wildcard which the device must support. In this case, when a packet is sent to the external port on the WAN, the device will forward the packet to the internal port.
ExternalPort	This field displays a port number (between 0 and 4294967295) the device listens on for NAT connection requests. 0 indicates a wildcard. This sets the device to forward a wildcard packet to the internal port.

Table 161 TR-098 Amendment 1: WAN Device: WANIPConnection: PortMapping: Details

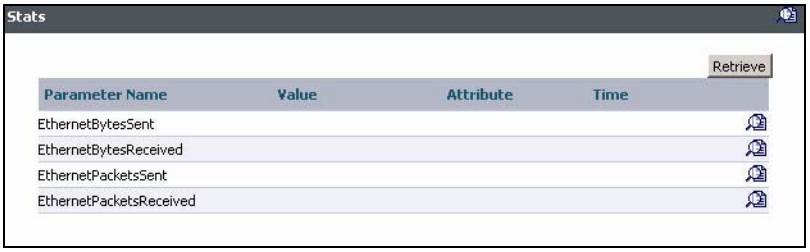
PARAMETER NAME	VALUE
InternalPort	This field displays a port number for the internal port (between 1 and 4294967295) to which the device forwards packets with wildcard.
PortMappingProtocol	This field displays the protocol (**UDP** or **TCP**) used for port mapping.
InternalClient	This field displays the IP address or domain name of a host on the LAN. To allow UDP port mapping or multiple NAT clients to use the same port number, use the broadcast address of 255.255.255.255 for the internal client.
PortMappingDescription	This field displays a descriptive name (up to 256 characters) to identify this port mapping entry.

21.13.4 WAN IP Connection Statistics

Display the **Stats** screen to view the statistics of all IP connections on the WAN interface.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANIPConnection**.
4. Click a number and **Stats** to display the screen as shown.

Figure 295 TR-098 Amendment 1: WAN Device: WANIPConnection: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 162 TR-098 Amendment 1: WAN Device: WANIPConnection: Stats

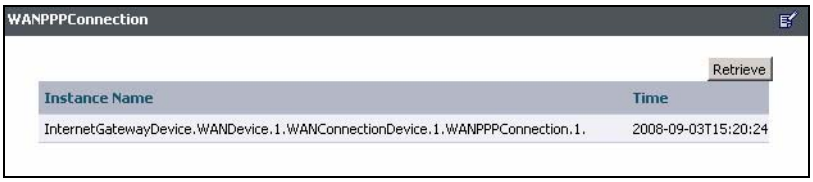
PARAMETER NAME	VALUE
EthernetBytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
EthernetBytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
EthernetPacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
EthernetPacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

21.14 WAN PPP Connection

Display the **WANPPPConnection** screen to view a PPP connection instance on the WAN interface. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection** to display the screen as shown.

Figure 296 TR-098 Amendment 1: WAN Device: WANPPPConnection



21.14.1 WAN PPP Connection Details

Display the detailed **WANPPPConnection** screen to configure and view basic PPP settings for Internet access on the WAN interface.

1. Select a registered device in the Device List window and click **Configuration** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number to display the screen as shown.

Figure 297 TR-098 Amendment 1: WAN Device: WANPPPConnection: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 163 TR-098 Amendment 1: WAN Device: WANPPPConnection: Details

PARAMETER NAME	VALUE
Enable	This field displays **1** to indicate that this link is active; otherwise, it displays **0**.
ConnectionStatus	This field displays the link status
PossibleConnectionTypes	This field displays the connection type(s) this link supports.
ConnectionType	This field displays the connection type for this link.
Name	This field displays a descriptive name (up to 256 characters) for this link.
Uptime	This field displays the number of seconds the link has been up.
LastConnectionError	This field displays the cause for the last failed connection attempt.

Table 163 TR-098 Amendment 1: WAN Device: WANPPPConnection: Details (continued)

PARAMETER NAME	VALUE
AutoDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) the device is to wait before disconnecting the link. **0** means you do not want the device to disconnect the link automatically.
IdleDisconnectTime	This field displays the number of seconds (between 0 and 4294967295) of inactivity timeout for a link. When the time is reached without any network activity through the link, the device automatically disconnects the link. **0** means you do not want the device to disconnect the link automatically.
WarnDisconnectDelay	This field displays the number of seconds (between 0 and 4294967295) before the device changes the state of the link to the disconnecting state.
RSIPAvailable	This field displays whether the Realm-specific IP (RSIP) feature is supported on the device.
NATEnabled	This field displays **1** to indicate that the NAT (Network Address Translation) feature is enabled for this link; otherwise, this field displays **0**.
Username	This field displays the Internet access account user name (up to 64 characters) provided by the ISP for authentication.
Password	This field displays the Internet access account password (up to 64 characters) provided by the ISP for authentication.
PPPEncryptionProtocol	This field displays the protocol used for PPP encryption between the device and the ISP's network.
PPPCompressionProtocol	This field displays the protocol used for PPP traffic compression between the device and the ISP's network.
PPPAuthenticationProtocol	This field displays the protocol used for PPP connection authentication between the device and the ISP's network.
ExternalIPAddress	This field displays the IP address used by NAT for this connection.
RemoteIPAddress	This field displays the remote IP address for this connection.
MaxMRUSize	This field displays the maximum size (between 1 and 1540) for the Ethernet frames allowed on this link.
CurrentMRUSize	This field displays the current configured maximum frame size allowed from a remote host.
DNSEnabled	This field displays **1** to set the device to resolve domain names through this link; otherwise, this field is **0**.
DNSOverrideAllowed	This field displays **1** to allow a non-empty DNS address to be replaced by a DNS entry received on the WAN; otherwise, this field displays **0**.
DNSServers	This field displays the IP address(es) of the DNS server(s). Multiple IP addresses are separated by a comma.
MACAddress	This field is applicable when you select **Enable** in the **MACAdddressOverride** field. This field displays the MAC address of this interface on the device.
MACAddressOverride	This field displays **1** to allow change of MAC address on this interface in the **MACAddress** field. This field displays **0** if you do not allow MAC address modification.
TransportType	This field displays the transport protocol for the PPP connection.
PPPoEACName	This field displays the descriptive name for the PPPoE Access Concentrator (AC).
PPPoEServiceName	This field displays the descriptive name for the PPPoE service.
ConnectionTrigger	This field displays how the device will establish a connection (**AlwaysOn**, **OnDemand** and **Manual**) for Internet access.

Table 163 TR-098 Amendment 1: WAN Device: WANPPPConnection: Details (continued)

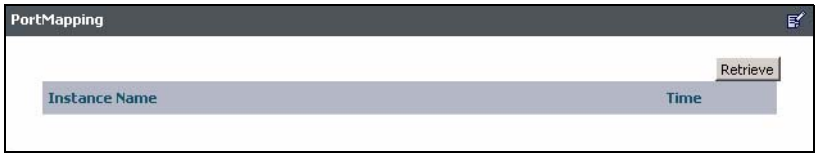
PARAMETER NAME	VALUE
RouteProtocolRx	This field displays the routing protocol (**RIP1**, **RIP2** or **OSPF**) the link is to use. **Off** disables the routing feature.
PPPLCPEcho	This field displays the time (in seconds) for PPP Link Control Protocol (LCP) echo.
PPPLCPEchoRetry	This field displays the time (in seconds) for PPP Link Control Protocol (LCP) echo retry.
ShapingRate	This field displays the rate (in bits per second) the device shapes the outgoing traffic to.
ShapingBurstSize	This field displays the burst size (in bytes) for traffic shaping.
PortMappingNumberOfEntries	This field displays the number of port mappings on this link.

21.14.2 Port Mapping Table

Use the **PortMapping** screen to view the port mapping instance for the WAN PPP connection. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **PortMapping** to display the screen as shown.

Figure 298 TR-098 Amendment 1: WAN Device: WANPPPConnection: PortMapping

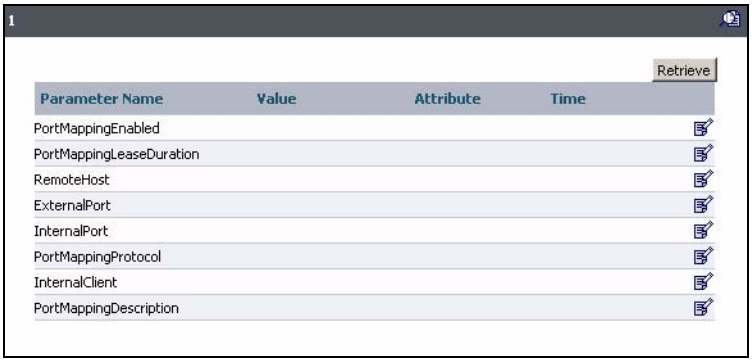


21.14.3 Port Mapping Table Details

Use the detailed **PortMapping** screen to configure the port mapping settings for the WAN PPP connection.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **PortMapping**.
5. Click a number to display the screen as shown.

Figure 299 TR-098 Amendment 1: WAN Device: WANPPPConnection: PortMapping: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 164 TR-098 Amendment 1: WAN Device: WANPPPConnection: PortMapping: Details

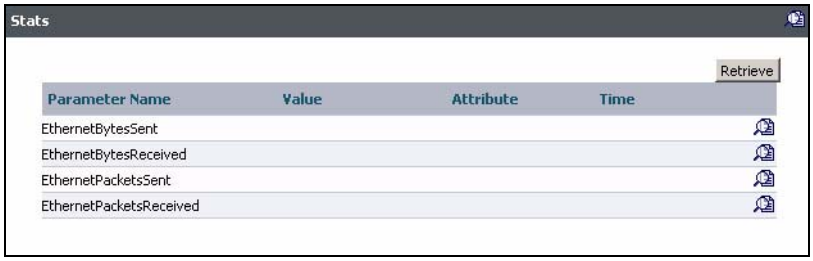
PARAMETER NAME	VALUE
PortMappingEnabled	This field displays **1** to indicate that the port mapping entry on this link is enabled; otherwise this field displays **0**.
PortMappingLeaseDuration	This field displays the time (between 1 to 4294967295 seconds) the device stores the port mapping entry. After this, the entry is removed from the port mapping table. 0 means that a port mapping entry is static and cannot be removed from the port mapping table.
RemoteHost	This field displays the IP address of the remote host device. If this field is blank, it indicates a wildcard which the device must support. In this case, when a packet is sent to the external port on the WAN, the device will forward the packet to the internal port.
ExternalPort	This field displays a port number (between 0 and 4294967295) the device listens on for NAT connection requests. 0 indicates a wildcard. This sets the device to forward a wildcard packet to the internal port.
InternalPort	This field displays a port number for the internal port (between 1 and 4294967295) to which the device forwards packets with wildcard.
PortMappingProtocol	This field displays the protocol (**UDP** or **TCP**) used for port mapping.
InternalClient	This field displays the IP address or domain name of a host on the LAN. To allow UDP port mapping or multiple NAT clients to use the same port number, use the broadcast address of 255.255.255.255 for the internal client.
PortMappingDescription	This field displays a descriptive name (up to 256 characters) to identify this port mapping entry.

21.14.4 WAN PPP Connection Statistics

Display the **Stats** screen to view the statistics of all PPP connections on the WAN interface.

1. Select a registered device in the Device List window and click **Data Model** > **InternetGatewayDevice** > **WANDevice**.
2. Click a number and **WANConnectionDevice**.
3. Click a number and **WANPPPConnection**.
4. Click a number and **Stats** to display the screen as shown.

Figure 300 TR-098 Amendment 1: WAN Device: WANPPPConnection: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 165 TR-098 Amendment 1: WAN Device: WANPPPConnection: Stats

PARAMETER NAME	VALUE
EthernetBytesSent	This field displays the total number of bytes sent through the WAN since the device was last reset.
EthernetBytesReceived	This field displays the total number of bytes received on the WAN since the device was last reset.
EthernetPacketsSent	This field displays the total number of packets sent through the WAN since the device was last reset.
EthernetPacketsReceived	This field displays the total number of packets received on the WAN since the device was last reset.

PART VI
Voice Service 1.0 (TR-104)

This part contains the following chapters.

- Voice Service (357)

22

Voice Service

This chapter describes the screens you use to configure and view VoIP settings.

22.1 Services

Display the **Services** screen to view the number of voice service entries on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** to display the screen.

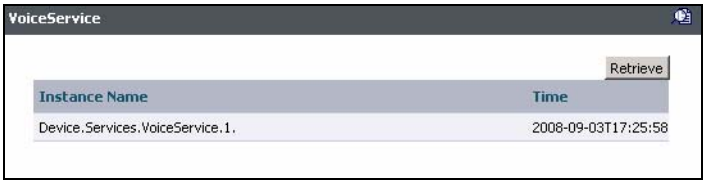
Figure 301 TR-104: Services

22.2 Voice Service Screen

Display the first **VoiceService** screen to view the number of VoIP services available on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService** to display the screen.

Figure 302 TR-104: VoiceService



22.2.1 Voice Service Details

Display the detailed **VoiceService** screen to view the number of VoIP profiles on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService** and click an index number to display the screen.

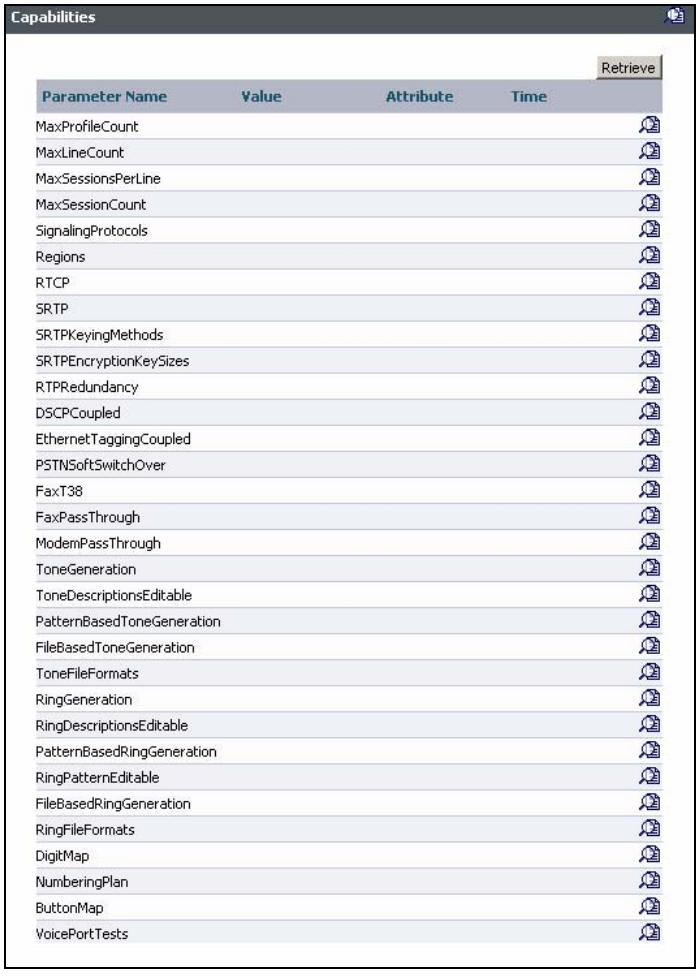
Figure 303 TR-104: VoiceService: Details

22.3 VoIP Capabilities

You can view the VoIP functions available on the device in the **Capabilities** screen.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**. Click a number and **Capabilities** to display the screen.

Figure 304 TR-104: VoiceService: Capabilities



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 166 TR-104: VoiceService: Capabilities

PARAMETER NAME	VALUE
MaxProfileCount	This field displays the maximum number of voice profiles supported on the device.
MaxLineCount	This field displays the maximum number of voice connections to a peer VoIP endpoint supported on the device.
MaxSessionsPerLine	This field displays the maximum number of sessions per connection.
MaxSessionCount	This field displays the maximum number of sessions allowed on the device.
SignalingProtocols	This field displays the signaling protocol(s) supported on the device.
Regions	This field displays the two-character code for the country in which the device is configured to work. If this field is empty, the device is not customized to work in any geographical area.
RTCP	This field indicates whether RTCP (Real Time Control Protocol) is activated on the device or not.
SRTP	This field indicates whether SRTP (Secure Real Time Control Protocol) is activated on the device or not.
SRTPKeyingMethods	This field displays the supported SRTP keying method(s) the device supports.
SRTPEncryptionKeySizes	This field displays the supported encryption key lengths(s) for SRTP this device supports.
RTPRedundancy	This field indicates whether the RTP redundancy is activated on the device or not.
DSCPCoupled	This field indicates if the device is to send call control packets with the same DSCP setting as the transmitted RTP packets.
EthernetTaggingCoupled	This field indicates if the device is to send call control packets with the same tag as the transmitted RTP packets.
PSTNSoftSwitchOver	This field indicates if the device is able to forward calls to PSTN lines in case the VoIP connection is down.
FaxT38	This field indicates whether the T.38 fax feature is supported on the device or not.
FaxPassThrough	This field indicates whether the fax passthrough feature is supported on the device or not.
ModemPassThrough	This field indicates whether the modem passthrough feature is supported on the device or not.
ToneGeneration	This field indicates whether the tone generation feature is supported on the device or not.
ToneDescriptionsEditable	This field displays whether you can change the tone description and the tone pattern tables.
PatternBasedToneGeneration	This field displays whether the device supports tone generation based on tone patterns.
FileBasedToneGeneration	This field displays whether the device supports tone generation based on file playback.
ToneFileFormats	This field displays the list of tone file formats the device supports.
RingGeneration	This field indicates whether the ring generation feature is supported on the device or not.

Table 166 TR-104: VoiceService: Capabilities (continued)

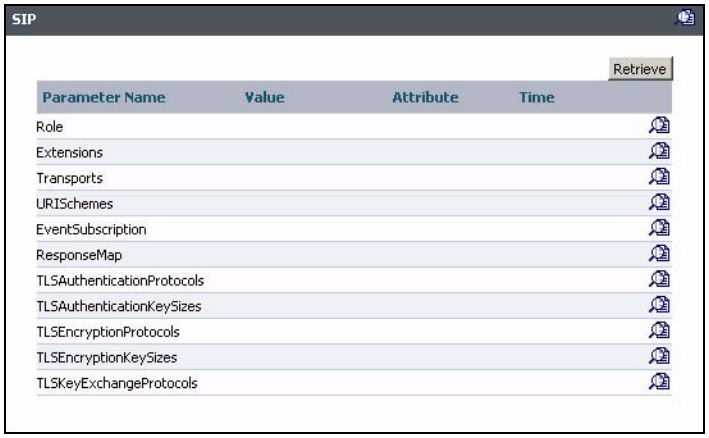
PARAMETER NAME	VALUE
RingDescriptionsEditable	This field displays whether you can change the ring description and the ring pattern tables.
PatternBasedRingGeneration	This field displays whether the device supports ring generation based on tone patterns.
RingPatternEditable	This field displays whether you can change the ring pattern table.
FileBasedRingGeneration	This field displays whether the device supports ring generation based on file playback.
RingFileFormats	This field displays the list of ring file formats the device supports.
DigitMap	This field displays whether the device supports the digimap parameters.
NumberingPlan	This field indicates whether numbering plan configuration is supported on the device or not.
ButtonMap	This field indicates whether button map configuration is supported on the device or not.
VoicePortTests	This field indicates whether the voice port testing feature is supported on the device or not.

22.3.1 SIP Setup

You can view and configure SIP settings in the **SIP** screen.

1. Select a registered device in the Device List window and click **Configuration** > **Device** > **Services** > **VoiceService**.
2. Click a number and **Capabilities**.
3. Click **SIP** to display the screen.

Figure 305 TR-104: VoiceService: Capabilities: SIP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 167 TR-104: VoiceService: Capabilities: SIP

PARAMETER NAME	VALUE
Role	This field displays the operation mode of the device in the network.
Extensions	This field displays the SIP extension methods supported on the device.

Table 167 TR-104: VoiceService: Capabilities: SIP (continued)

PARAMETER NAME	VALUE
Transports	This field displays the list of SIP transport protocols supported on the device.
URISchemes	This field displays additional URI (Uniform Resource Identifier) schemes supported on the device.
EventSubscription	This field indicates whether SIP event subscription is activated on the device.
ResponseMap	This field indicates whether SIP response map is activated on the device.
TLSAuthenticationProtocols	This field displays the authentication protocol used for TLS (Transport Layer Security) communication.
TLSAuthenticationKeySizes	This field displays the size of the authentication key.
TLSEncryptionProtocols	This field displays the encryption protocol used.
TLSEncryptionKeySizes	This field displays the size of the encryption key.
TLSKeyExchangeProtocols	This field displays the protocols used for key exchange.

22.3.2 MGCP Setup

You can view and configure the MGCP (Media Gateway Control Protocol) settings in the **MGCP** screen. The **Extensions** field displays the name(s) of the MGCP package supported. If there is more than one name, the names are separated by a comma. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Configuration** > **Device** > **Services** > **VoiceService**.
2. Click a number and **Capabilities.**
3. Click **MGCP** to display the screen.

Figure 306 TR-104: VoiceService: Capabilities: MGCP

22.3.3 H.323 Setup

You can view and configure the H323 settings in the **H323** screen.

1. Select a registered device in the Device List window and click **Configuration** > **Device** > **Services** > **VoiceService**.
2. Click a number and **Capabilities.**
3. Click **H323** to display the screen.

Figure 307 TR-104: VoiceService: Capabilities: H323

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 168 TR-104: VoiceService: Capabilities: H323

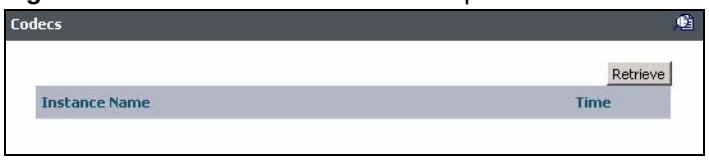
PARAMETER NAME	VALUE
FastStart	This field displays whether the faststart feature is enabled (**1**) for H323.
H235AuthenticationMethods	This field displays the authentication method used for H323.

22.3.4 Codecs

You can view the number of codec instances in the **Codecs** screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Configuration** > **Device** > **Services** > **VoiceService**.
2. Click a number and **Capabilities.**
3. Click **Codecs** to display the screen.

Figure 308 TR-104: VoiceService: Capabilities: Codecs

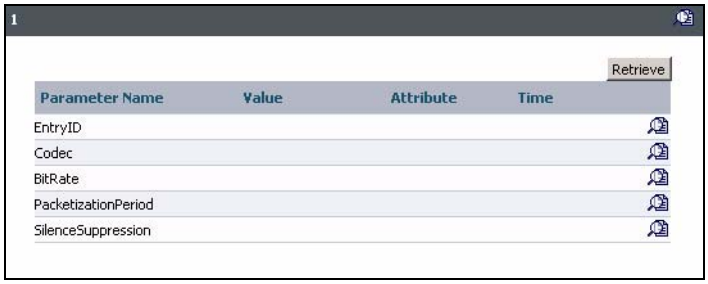


22.3.5 Codecs Details

You can view and configure codec settings in the detailed **Codecs** screen.

1. Select a registered device in the Device List window and click **Configuration** > **Device** > **Services** > **VoiceService**.
2. Click a number and **Capabilities.**
3. Click **Codecs** and a number to display the screen.

Figure 309 TR-104: VoiceService: Capabilities: Codecs: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 169 TR-104: VoiceService: Capabilities: Codecs: Details

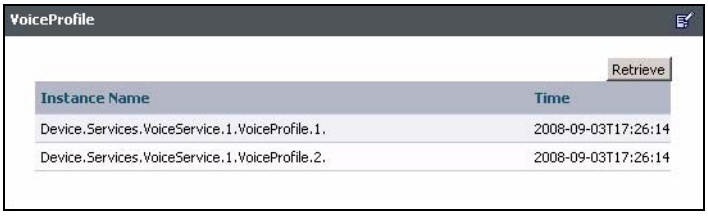
PARAMETER NAME	VALUE
EntryID	This field displays the index number of the codec entry.
Codec	This field displays the name of the codec.
BitRate	This field displays the bit rate in bits per second.
PacketizationPeriod	This field displays the list of packetization periods (in milliseconds) supported on the device.
SilenceSuppression	This field indicates whether the silence suppression feature is supported by the codec or not.

22.4 Voice Profile

Use the **VoiceProfile** to view the number of voice profiles on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**. Click a number and **VoiceProfile** to display the configuration screen.

Figure 310 TR-104: VoiceService: VoiceProfile



22.4.1 Voice Profile Details

Use the detailed **VoiceProfile** to configure common profile settings for the voice connection(s) on the device.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.

3 Click a number to display the configuration screen.

Figure 311 TR-104: VoiceService: VoiceProfile: Details

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 170 TR-104: VoiceService: VoiceProfile: Details

PARAMETER NAME	VALUE
Enable	This field displays **Enabled** to indicate the profile is active. This field displays **Disabled** to indicate the profile is not active. This field displays **Quiescent** to prevent new session generation on the active line(s).
Reset	This field displays **1** to reset the line(s) on which the profile is applied. This field displays **0** to disable line reset.
NumberOfLines	This field displays the number of lines associated with the voice profile.
Name	This field displays a descriptive name (up to 64 characters) to identify the profile.
SignalingProtocol	This field displays the signaling protocol the profile is to use.
MaxSessions	This field displays the maximum number of simultaneous sessions allowed on the line(s) on which the profile is applied. Enter a number between 1 and 4294967295.
DTMFMethod	This field displays the DTMF method the profile is to pass.
DTMFMethodG711	This field displays the DTMF method the profile is to pass if the current codec is G.711.
Region	This field displays the geographical area this profile is used. This may be used by the device to customize localization settings.
DigitMap	This field displays the requirements before the device sends out a request.
DigitMapEnable	This field displays **1** to use a digitmap for voice transmission; otherwise, this field is **0**.
STUNEnable	This field displays **1** to allow STUN to work in a NAT environment; otherwise, this field displays **0**.

Table 170 TR-104: VoiceService: VoiceProfile: Details (continued)

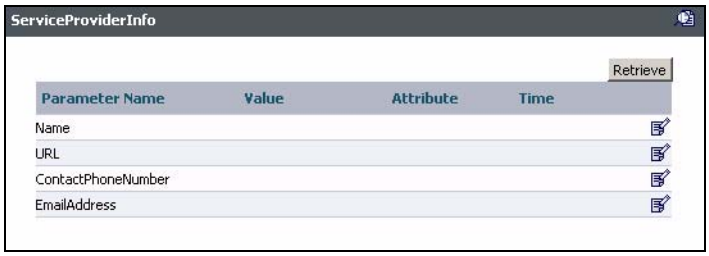
PARAMETER NAME	VALUE
STUNServer	This field displays the server name or the IP address of the STUN server.
NonVoiceBandwidthReservedUpstream	This field displays the amount of upstream bandwidth (in bps) that the device uses for non-voice traffic.
NonVoiceBandwidthReservedDownstream	This field displays the amount of downstream bandwidth (in bps) that the device uses for non-voice traffic.
PSTNFailOver	This field displays **1** to indicate that the device will use the PSTN server when the voice network is down.
FaxPassThrough	This field displays how the device is to handle fax data.
ModemPassThrough	This field displays how the device is to handle modem data.

22.5 Voice Service Provider Information

Use the **ServiceProviderInfo** screen to view and configure service provider information.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **ServiceProviderInfo** to display the configuration screen.

Figure 312 TR-104: VoiceService: VoiceProfile: ServiceProviderInfo



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 171 TR-104: VoiceService: VoiceProfile: ServiceProviderInfo

PARAMETER NAME	VALUE
Name	This field displays the name of the service provider.
URL	This field displays the website address of the service provider.
ContactPhoneNumber	This field displays the customer support phone number of the service provider.
EmailAddress	This field displays the customer support email address of the service provider.

22.6 SIP Profile

Use this **SIP** screen to view and configure SIP settings for the voice profile.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.

2 Click a number and **VoiceProfile**.
3 Click a number and **SIP** to display the configuration screen.

Figure 313 TR-104: VoiceService: VoiceProfile: SIP

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 172 TR-104: VoiceService: VoiceProfile: SIP: Details

PARAMETER NAME	VALUE
ProxyServer	This field displays the IP address or the host name of the SIP proxy server. All SIP signalling traffic is sent to this proxy server.
ProxyServerPort	This field displays the SIP server port number to which the device is to connect.
ProxyServerTransport	This field displays the transport protocol the device is to use to connect to the SIP server.

Table 172 TR-104: VoiceService: VoiceProfile: SIP: Details (continued)

PARAMETER NAME	VALUE
RegistrarServer	This field displays the IP address or the host name of the SIP registrar server.
RegistrarServerPort	This field displays the SIP registrar server port number to which the device is to connect.
RegistrarServerTransport	This field displays the transport protocol the device is to use to connect to the SIP registrar server.
UserAgentDomain	This field displays the domain name of the device.
UserAgentPort	This field displays the port number used for incoming call control signaling.
UserAgentTransport	This field displays the transport protocol used for incoming call control signaling.
OutboundProxy	This field displays the IP address or the host name of the outbound proxy server.
OutboundProxyPort	This field displays the port number on the outbound proxy server to which the device is to connect.
Organization	This field displays the name of the organization (up to 256 characters) to include in the packets.
RegistrationPeriod	This field displays the time (between 1 and 4294967295 seconds) the device waits before re-registering to the SIP server.
TimerT1, T2, T4, A..K	This field displays the value for the SIP timer (in milliseconds).
InviteExpires	This field displays the time (in seconds) the SIP invite request expires.
ReInviteExpires	This field displays the time (in seconds) the SIP reinvite request expires.
RegisterExpires	This field displays the time (between 1 and 4294967295 seconds) the SIP registration expires.
RegistersMinExpires	This field displays the time (in seconds) the min-register request expires.
RegisterRetryInterval	This field displays the time (in seconds) the register request retry expires.
InboundAuth	This field displays the authentication type for inbound request.
InboundAuthUsername	This field displays the username for inbound authentication.
InboundAuthPassword	This field displays the password associated with the username above.
UseCodecPriorityInSDPResponse	This field displays **1** to set the device to use the highest-priority codec offered to respond to an invite packet; otherwise, this field is **0**.
DSCPMark	This field displays the DiffServ code point (DSCP) to use for outgoing SIP signaling packets.
VLANIDMark	This field displays the VLAN ID to use for outgoing SIP signaling packets.
EthernetPriorityMark	This field displays the IEEE 802.1D priority level to use for outgoing SIP signaling packets.
SIPEventSubscribeNumberOfElements	This field displays the number of EventSubscribe objects.
SIPResponseMapNumberOfElements	This field displays the number of SIPResponseMap objects.

22.6.1 SIP Event Subscription

Use the **EventSubscribe** screen to view the list of SIP event subscriptions. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **SIP**.
4. Click **EventSubscribe** to display the screen.

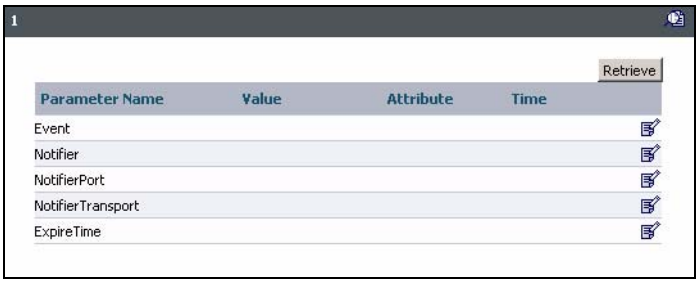
Figure 314 TR-104: VoiceService: VoiceProfile: SIP: EventSubscribe

22.6.2 SIP Event Subscription Details

Use the **EventSubscribe** screen to view the list of SIP event subscriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **SIP**.
4. Click **EventSubscribe** and a number to display the screen.

Figure 315 TR-104: VoiceService: VoiceProfile: SIP: EventSubscribe: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 173 TR-104: VoiceService: VoiceProfile: SIP: EventSubscribe: Details

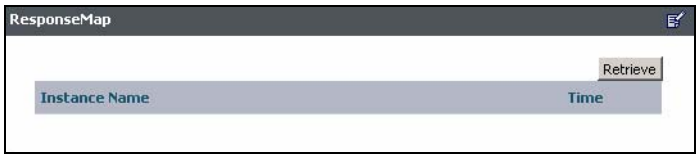
PARAMETER NAME	VALUE
Event	This field displays the event name.
Notifier	This field displays the domain name or the IP address of the event notifying server.
NotifierPort	This field displays the port number used to connect to the event notifier.
NotifierTransport	This field displays the transport protocol used to connect to the event notifier.
ExpireTime	This field displays the subscription refresh timer in seconds.

22.6.3 SIP Response Mapping Table

Use the **ResponseMap** screen to view the list of SIP response mapping for received messages and tones. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **SIP**.
4. Click **ResponseMap** to display the screen.

Figure 316 TR-104: VoiceService: VoiceProfile: SIP: ResponseMap

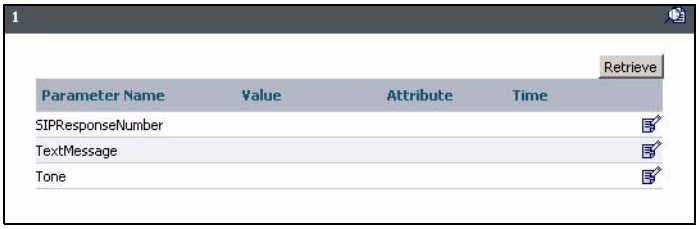


22.6.4 SIP Response Mapping Details

Use the detailed **ResponseMap** screen to view the list of SIP event subscriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **SIP**.
4. Click **ResponseMap** and a number to display the screen.

Figure 317 TR-104: VoiceService: VoiceProfile: SIP: ResponseMap: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 174 TR-104: VoiceService: VoiceProfile: SIP: ResponseMap: Details

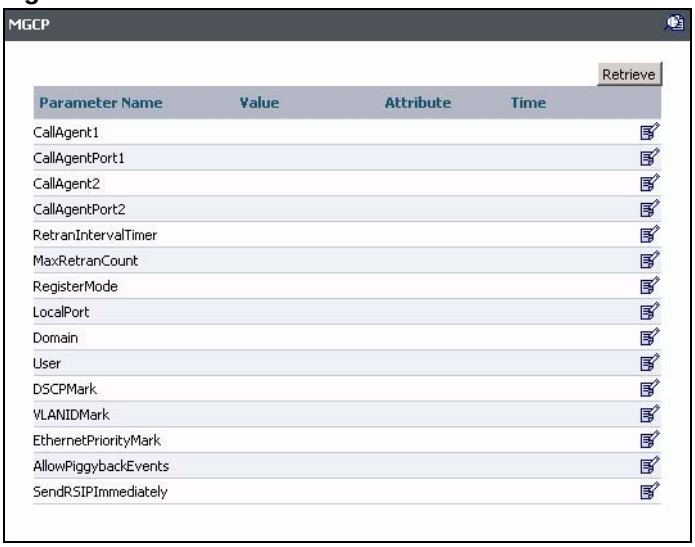
PARAMETER NAME	VALUE
SIPResponseNumber	This field displays the response code number.
TextMessage	This field displays the text displays on the screen when a SIP response is received.
Tone	This field displays the name of the tone the user hears when a SIP response is received.

22.7 MGCP

Use the **MGCP** screen to view and configure settings for the MGCP call agent(s) for the profile.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **MGCP**.

Figure 318 TR-104: VoiceService: VoiceProfile: MGCP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 175 TR-104: VoiceService: VoiceProfile: MGCP

PARAMETER NAME	VALUE
CallAgent1 .. 2	This field displays the host name or the IP address of the MSCP call agent.
CallAgentPort1 .. 2	This field displays the destination port to use to connect to the MSCP call agent.
RetranIntervalTimer	This field displays the time interval (in milliseconds) the device is to wait before sending the message again.
MaxRetranCount	This field displays the maximum number of times the device is to resend a message.
RegisterMode	This field displays the registration mode.
LocalPort	This field displays the listening port number for incoming call control signalling.
Domain	This field displays the name of the domain to which the device belongs.
User	This field displays the user name used to access the call agent.
DSCPMark	This field displays the DiffServ Code Point the device adds to outgoing MGCP signalling packets.
VLANIDMark	This field displays the IEEE 802.1Q VLAN ID the device adds to outgoing MGCP signalling packets.

Table 175 TR-104: VoiceService: VoiceProfile: MGCP (continued)

PARAMETER NAME	VALUE
EthernetPriorityMark	This field displays the IEEE 802.p priority level the device adds to outgoing MGCP signalling packets.
AllowPiggybackEvents	This field displays whether piggy back event is allowed to the MGCP call agent.
SendRSIPImmediately	This field displays whether the device is to send RSIP immediately after restart.

22.8 H323

Use the **H323** screen to view and configure H.323 call signal settings for the profile.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **H323**.

Figure 319 TR-104: VoiceService: VoiceProfile: H323

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 176 TR-104: VoiceService: VoiceProfile: H.323

PARAMETER NAME	VALUE
Gatekeeper	This field displays the host name of the IP address of the H.323 Gatekeeper.
GatekeeperPort	This field displays the destination port number to use to connect to the H.323 Gatekeeper.
GatekeeperID	This field displays the ID number of the H.323 Gatekeeper.
TimeToLive	This field displays the time to live (TTL) in milliseconds when registering to an H.323 Gatekeeper.
H235Authentication	This field displays whether H.235 security is enabled.
AuthPassword	This field displays the password for use with H.235 security.
SendersID	This field displays the device ID for use with H.235 security.
DSCPMark	This field displays the DiffServ Code Point the device adds to outgoing H.323 signalling packets.

Table 176 TR-104: VoiceService: VoiceProfile: H.323 (continued)

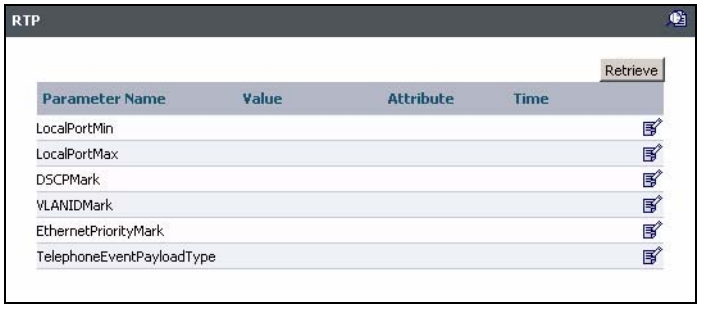
PARAMETER NAME	VALUE
VLANIDMark	This field displays the IEEE 802.1Q VLAN ID the device adds to outgoing H.323 signalling packets.
EthernetPriorityMark	This field displays the IEEE 802.p priority level the device adds to outgoing H.323 signalling packets.

22.9 Voice Profile RTP Setup

Use the **RTP** screen to configure RTP (Real Time Protocol) settings for sending voice traffic on the device.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **RTP** to display the configuration screen.

Figure 320 TR-104: VoiceService: VoiceProfile: RTP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 177 TR-104: VoiceService: VoiceProfile: RTP

PARAMETER NAME	VALUE
LocalPortMin	This field displays the start of the local port range for incoming voice traffic.
LocalPortMax	This field displays the end of the local port range for incoming voice traffic.
DSCPMark	This field displays the DiffServ code number for the outgoing voice traffic.
VLANIDMark	This field displays the VLAN ID to use for the outgoing voice traffic.
EnthernetPriorityMark	This field displays the IEEE 802.1D priority level to use for the outgoing voice traffic.
TelephoneEventPayloadType	This field displays the traffic type for the RTF telephone event.

22.9.1 Voice Profile RTCP Setup

Use the **RTCP** screen to configure RTCP (Real-time Transport Control Protocol) settings for sending voice traffic on the device.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.

2 Click a number and **VoiceProfile**.
3 Click a number and **RTP**.
4 Click **RTCP** to display the configuration screen.

Figure 321 TR-104: VoiceService: VoiceProfile: RTP: RTCP

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 178 TR-104: VoiceService: VoiceProfile: RTP: RTCP

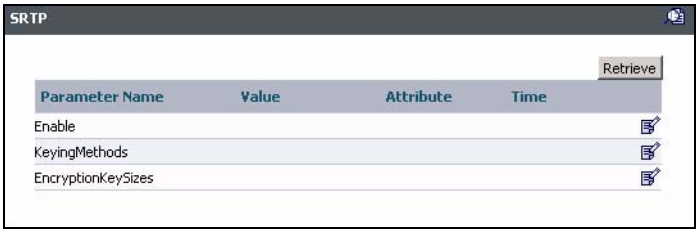
PARAMETER NAME	VALUE
Enable	This field displays whether RTCP is enabled or disabled.
TxRepeatInterval	This field displays the repeat transmission interval (in milliseconds).
LocalCName	This field displays the local Cname (canonical name).

22.9.2 Voice Profile SRTP Setup

Use the **SRTP** screen to configure SRTP (Secure Real-time Transport Protocol) settings for sending voice traffic on the device.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2 Click a number and **VoiceProfile**.
3 Click a number and **RTP**.
4 Click **SRTP** to display the configuration screen.

Figure 322 TR-104: VoiceService: VoiceProfile: RTP: SRTP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 179 TR-104: VoiceService: VoiceProfile: RTP: SRTP

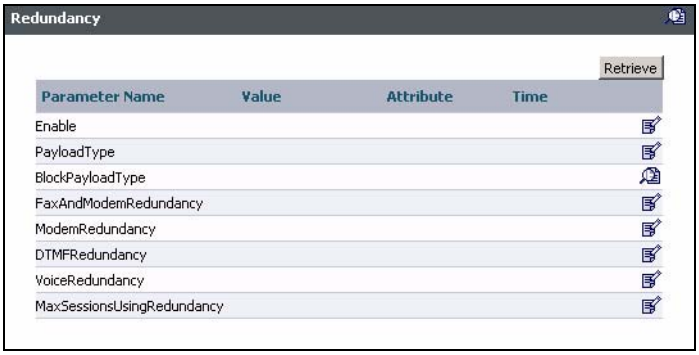
PARAMETER NAME	VALUE
Enable	This field displays whether SRTP is enabled or disabled.
KeyingMethods	This field displays the keying methods the device can use.
EncryptionKeySizes	This field displays the encryption key sizes the device can use.

22.9.3 Voice Profile RTP Redundancy Setup

Use the **Redundancy** screen to configure RTP payload redundancy.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **RTP**.
4. Click **Redundancy** to display the configuration screen.

Figure 323 TR-104: VoiceService: VoiceProfile: RTP: Redundancy



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 180 TR-104: VoiceService: VoiceProfile: RTP: Redundancy

PARAMETER NAME	VALUE
Enable	This field displays whether RTP payload redundancy is enabled or disabled.
PayloadType	This field displays the RTP payload type.
BlockPayloadType	This field displays the block payload type of the RTP redundancy packet.
FaxAndModemRedundancy	This field displays the redundancy number for fax data passthrough.
ModemRedundancy	This field displays the redundancy number for modem data passthrough.
DTMFRedundancy	This field displays the redundancy number for DTMF transmission.
VoiceRedundancy	This field displays the redundancy number for voice transmission.
MaxSessionsUsingRedundancy	This field displays the maximum number of sessions with RTP redundancy for this voice profile.

22.10 Voice Profile Numbering Plan

Use the **NumberingPlan** screen to configure the numbering plan for this voice profile.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **NumberingPlan** to display the configuration screen.

Figure 324 TR-104: VoiceService: VoiceProfile: NumberingPlan

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 181 TR-104: VoiceService: VoiceProfile: NumberingPlan

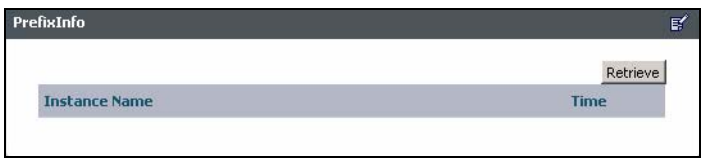
PARAMETER NAME	VALUE
MinimumNumberOfDigits	This field displays the minimum number of digits to collect before initiating an out-going request (such as a SIP INVITE).
MaximumNumberOfDigits	This field displays the maximum number of digits to collect before initiating an out-going request (such as a SIP INVITE). Additional numbers will be ignored.
InterDigitTimerStd	This field displays the maximum time allowed between dialing of numbers. The timer resets with each number dialed. When the timer expires, this indicates the dialing is complete.
InterDigitTimerOpen	This field displays the maximum time allowed between dialing of numbers defined in a prefix based has been reached.
InvalidNumberTone	This field displays the name of the tone a user hears when an invalid number is dialed.
PrefixInfoMaxEntries	This field displays the maximum number of prefix objects allowed.
PrefixInfoNumberOfEntries	This field displays the number of PrefixInfo objects.

22.10.1 Voice Profile Prefix Information

Use the **PrefixInfo** screen to view the list of prefix information entries for the voice profile. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **NumberingPlan**.
4. Click **PrefixInfo** to display the screen.

Figure 325 TR-104: VoiceService: VoiceProfile: NumberingPlan: PrefixInfo

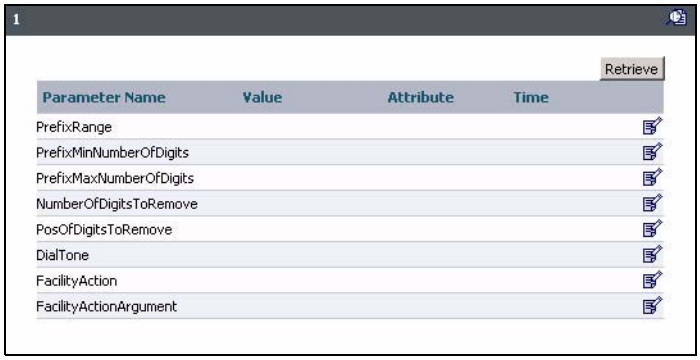


22.10.2 Voice Profile Prefix Information Setup

Use the detailed **PrefixInfo** screen to view the list of prefix information entries for the voice profile.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **NumberingPlan**.
4. Click **PrefixInfo** and a number to display the screen.

Figure 326 TR-104: VoiceService: VoiceProfile: PrefixInfo: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 182 TR-104: VoiceService: VoiceProfile: PrefixInfo: Details

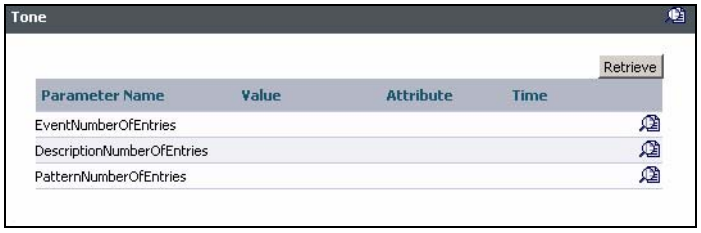
PARAMETER NAME	VALUE
PrefixRange	This field displays the range of prefixes
PrefixMinNumberOfDigits	This field displays the minimum digits allowed for the prefix range. Once the inter-digit timer and the minimum input digit is reached, an out-going request is initiated.
PrefixMaxNumberOfDigits	This field displays the maximum digits allowed for the prefix range. Once the inter-digit timer and the maximum input digit is reached, an out-going request is initiated.
NumberOfDigitsToRemove	This field displays the number of digits to remove from the position specified in the internal digit buffer.
PosOfDigitsToRemove	This field displays the position of the digits in the internal buffer to remove.
DialTone	This field displays the name of the dial tone to display when a user dials the same prefix number as specified.
FacilityAction	This field displays the name of the facility action the device performs.
FacilityActionArgument	This field displays the arguments used by the facility action above.

22.11 Voice Profile Tone Setup

Use the **Tone** screen to view and configure the tones and announcements generated by the device.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Tone** to display the screen.

Figure 327 TR-104: VoiceService: VoiceProfile: Tone



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 183 TR-104: VoiceService: VoiceProfile: Tone

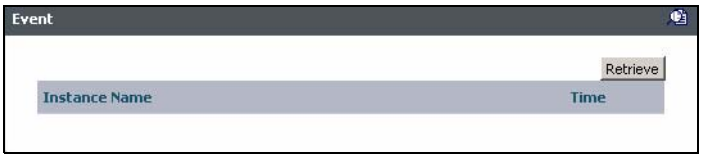
PARAMETER NAME	VALUE
EventNumberOfEntries	This field displays the number of entries in the tone event table.
DescriptionNumberOfEntries	This field displays the number of entries in the tone description table.
PatternNumberOfEntries	This field displays the number of entries in the tone pattern table.

22.11.1 Voice Profile Tone Event

Use the **Event** screen to view a list of tone events. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Tone**.
4. Click **Event** to display the screen.

Figure 328 TR-104: VoiceService: VoiceProfile: Tone: Event



22.11.2 Voice Profile Tone Event Setup

Use the detailed **Event** screen to configure tone event settings.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.

3 Click a number and **Tone**.
4 Click **Event** and a number to display the screen.

Figure 329 TR-104: VoiceService: VoiceProfile: Tone: Event: Details

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 184 TR-104: VoiceService: VoiceProfile: Tone: Event: Details

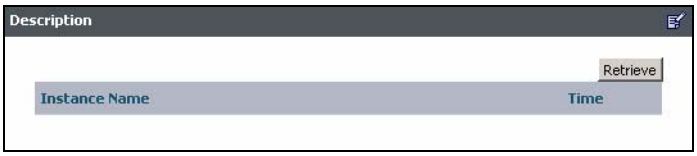
PARAMETER NAME	VALUE
Function	This field displays the name of the event to which the tone is applied.
ToneID	This field displays the index number of the tone (in the description table) to play for this event.

22.11.3 Voice Profile Tone Description

Use the **Description** screen to view a list of tone descriptions. Refer to Section 11.2.4 on page 132 for other field descriptions.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2 Click a number and **VoiceProfile**.
3 Click a number and **Tone**.
4 Click **Description** to display the screen.

Figure 330 TR-104: VoiceService: VoiceProfile: Tone: Description

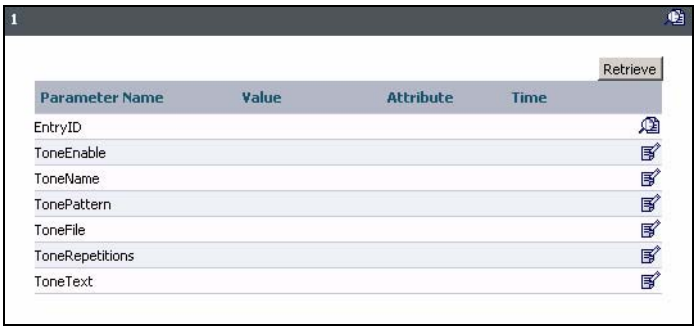


22.11.4 Voice Profile Tone Description Setup

Use the detailed **Description** screen to configure tone event descriptions.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2 Click a number and **VoiceProfile**.
3 Click a number and **Tone**.
4 Click **Description** and a number to display the screen.

Figure 331 TR-104: VoiceService: VoiceProfile: Tone: Description: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 185 TR-104: VoiceService: VoiceProfile: Tone: Description: Details

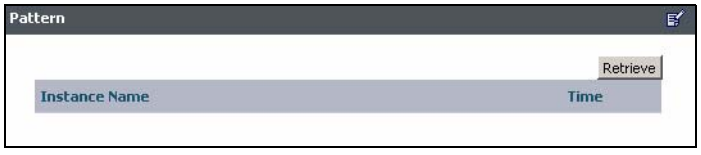
PARAMETER NAME	VALUE
EntryID	This field displays the index number.
ToneEnable	This field displays whether the tone is activated or not.
ToneName	This field displays the name for this tone.
TonePattern	This field displays the index number in the pattern table that starts the tone pattern.
ToneFile	This field displays the name of the tone file downloaded to the device.
ToneRepetitions	This field displays the number of times data in the tone file is repeated.
ToneText	This field displays the text a user sees on the screen when the tone is played.

22.11.5 Voice Profile Tone Pattern

Use the **Pattern** screen to view a list of tone patterns. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Tone**.
4. Click **Pattern** to display the screen.

Figure 332 TR-104: VoiceService: VoiceProfile: Tone: Pattern



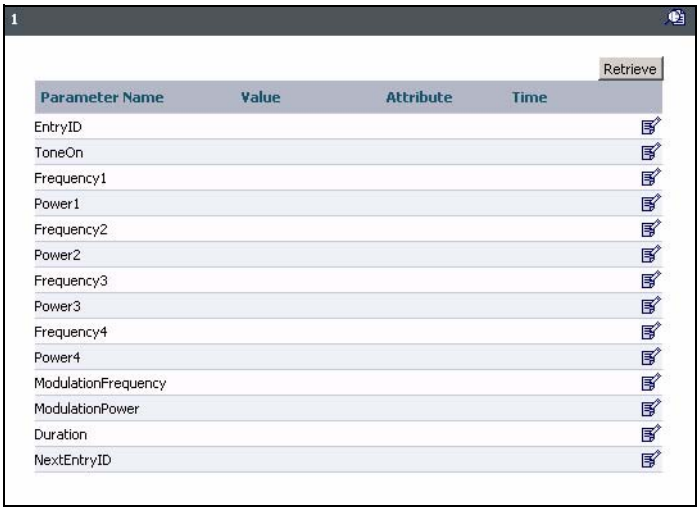
22.11.6 Voice Profile Tone Pattern Setup

Use the detailed **Pattern** screen to configure tone event settings.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.

2 Click a number and **VoiceProfile**.
3 Click a number and **Tone**.
4 Click **Pattern** and a number to display the screen.

Figure 333 TR-104: VoiceService: VoiceProfile: Tone: Pattern: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 186 TR-104: VoiceService: VoiceProfile: Tone: Pattern: Details

PARAMETER NAME	VALUE
EntryID	This field displays the index number of a single phase in the tone pattern.
ToneOn	This field displays whether or not the tone pattern is enabled during a phase.
Frequency1..4	This field displays the frequency of the tone component in hertz.
Power1..4	This field displays the tone power level in units of 0.1dBm0.
ModulationFrequency	This field displays the modulation frequency in hertz.
ModulationPower	This field displays the modulation power in units of 0.1dBm0.
Duration	This field displays the time (in milliseconds) for this phase of the tone pattern.
NextEntryID	This field displays the index number of the next phase of the tone pattern after the duration of the current phase is completed.

22.12 Voice Profile Button Map

Use the **ButtonMap** screen to view the number of button objects.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2 Click a number and **VoiceProfile**.
3 Click a number and **ButtonMap** to display the screen.

Figure 334 TR-104: VoiceService: VoiceProfile: ButtonMap

22.12.1 Voice Profile Button

Use the **Button** screen to view a list of button objects. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **ButtonMap**.
4. Click **Button** to display the screen.

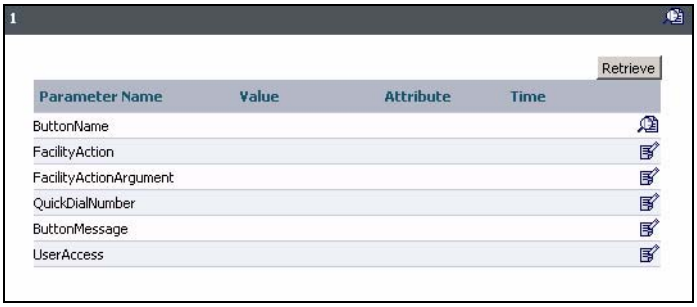
Figure 335 TR-104: VoiceService: VoiceProfile: ButtonMap: Button

22.12.2 Voice Profile Button Setup

Use the detailed **Button** screen to configure tone event settings.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **ButtonMap**.
4. Click **Button** and a number to display the screen.

Figure 336 TR-104: VoiceService: VoiceProfile: ButtonMap: Button: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 187 TR-104: VoiceService: VoiceProfile: ButtonMap: Button: Details

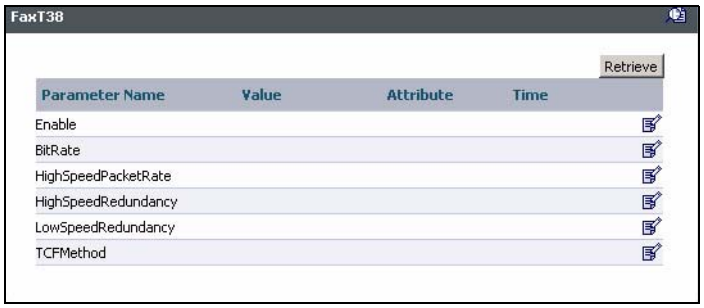
PARAMETER NAME	VALUE
ButtonName	This field displays the name of the button.
FacilityAction	This field displays the name of the optional facility action.
FacilityActionArgument	This field displays the argument for the optional facility action.
QuickDialNumber	This field displays the quick dial number.
ButtonMessage	This field displays the text a user sees on the screen when the button is pressed.
UserAccess	This field displays whether the user is allowed to change the button settings.

22.13 Voice Profile FaxT38

Use the **FaxT38** screen to configure fax T38 relay settings.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **FaxT38** to display the screen.

Figure 337 TR-104: VoiceService: VoiceProfile: FaxT38



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 188 TR-104: VoiceService: VoiceProfile: FaxT38

PARAMETER NAME	VALUE
Enable	This field displays whether T38 is enabled or not.
BitRate	This field displays the maximum bit rate for fax transmission.
HighSpeedPacketRate	This field displays the rate at which high speed data will be sent.
HighSpeedRedundancy	This field displays the packet-level redundancy for high speed transmission.
LowSpeedRedundancy	This field displays the packet-level redundancy for low speed transmission.
TCFMethod	This field displays the method used to send data through the network.

22.14 Voice Profile Line

Use the **Line** screen to view the list of voice lines associated to a voice profile. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line** to display the screen.

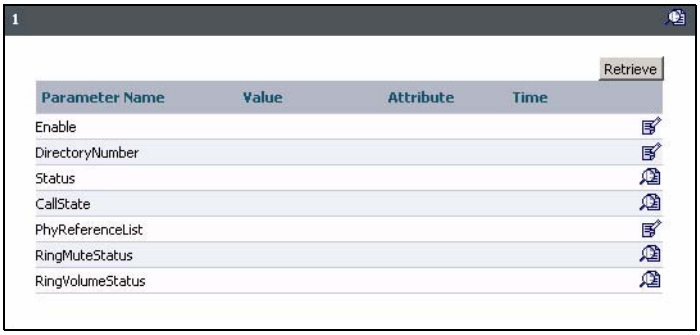
Figure 338 TR-104: VoiceService: VoiceProfile: Line

22.14.1 Voice Profile Line Setup

Use the **Line** screen to view and configure the voice line associated to a voice profile.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**
4. Click a number to display the screen.

Figure 339 TR-104: VoiceService: VoiceProfile: Line: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 189 TR-104: VoiceService: VoiceProfile: Line: Setup

PARAMETER NAME	DESCRIPTION
Enable	This field displays whether the line is activated or not.
DirectoryNumber	This field displays the directory number associated with this line.
Status	This field displays the status of the line.
CallState	This field displays the call status of the line.

Table 189 TR-104: VoiceService: VoiceProfile: Line: Setup (continued)

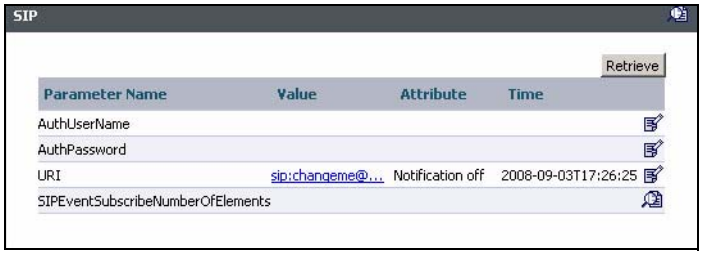
PARAMETER NAME	DESCRIPTION
PhyReferenceList	This field displays the list of physical references associated with this line.
RingMuteStatus	This field displays whether or not the ringing has been muted locally.
RingVolumeStatus	This field displays the percentage volume of the current ring tone.

22.14.2 Voice Profile Line SIP Setup

Use the **SIP** screen for a line to view and configure parameters associated to a SIP line.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**
4. Click a number and **SIP** to display the screen.

Figure 340 TR-104: VoiceService: VoiceProfile: Line: SIP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 190 TR-104: VoiceService: VoiceProfile: Line: SIP

PARAMETER NAME	VALUE
AuthUserName	This field displays the account user name to connect to the SIP server.
AuthPassword	This field displays the password associated with the user name above for authentication.
URI	This field displays the URI (Uniform Resource Identifier) to identify this SIP connection.
SIPEventSubscribeNumberOfElements	This field displays the number of SIP event subscription.

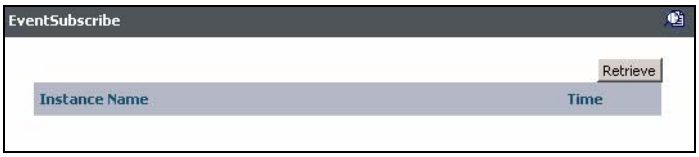
22.14.3 Line SIP Event Subscription

Use the **EventSubscribe** screen to view the list of SIP event subscriptions for a voice line. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.

3 Click a number and **Line**.
4 Click a number and **SIP**.
5 Click **EventSubscribe** to display the screen.

Figure 341 TR-104: VoiceService: VoiceProfile: Line: SIP Event Subscription

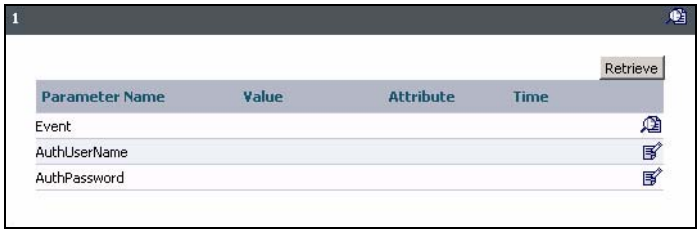


22.14.4 Line SIP Event Subscription Details

Use the detailed **EventSubscribe** screen to view the list of SIP event subscriptions.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2 Click a number and **VoiceProfile**.
3 Click a number and **Line**.
4 Click a number and **SIP**.
5 Click **EventSubscribe** and a number to display the screen.

Figure 342 TR-104: VoiceService: VoiceProfile: Line: SIP: EventSubscribe: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 191 TR-104: VoiceService: VoiceProfile: Line: SIP: EventSubscribe: Details

PARAMETER NAME	VALUE
Event	This field displays the event name.
AuthUserName	This field displays the account user name to connect to the SIP server.
AuthPassword	This field displays the password associated with the user name above for authentication.

22.14.5 Voice Profile Line MGCP

Use the **MGCP** screen to view the name of the line using MGCP (Media Gateway Control Protocol) signaling. Refer to Section 11.2.4 on page 132 for other field descriptions.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2 Click a number and **VoiceProfile**.
3 Click a number and **Line**.

4 Click a number and **MGCP** to display the screen.

Figure 343 TR-104: VoiceService: VoiceProfile: Line: MGCP

22.14.6 Voice Profile Line H323

Use the **H323** screen to view the H323 ID assigned to the line. Refer to Section 11.2.4 on page 132 for other field descriptions.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2 Click a number and **VoiceProfile**.
3 Click a number and **Line**.
4 Click a number and **H323** to display the screen.

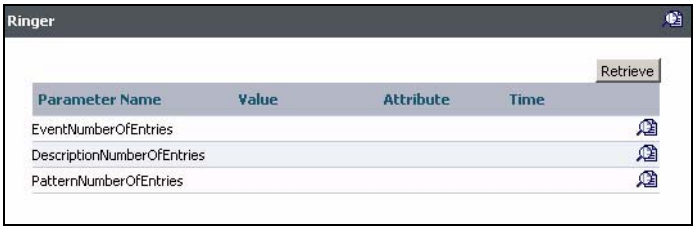
Figure 344 TR-104: VoiceService: VoiceProfile: Line: H323

22.14.7 Line Ringer Setup

Use the **Ringer** screen to view and configure the ring sequence the device generates.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2 Click a number and **VoiceProfile**.
3 Click a number and **Line**.
4 Click a number and **Ringer** to display the screen.

Figure 345 TR-104: VoiceService: VoiceProfile: Line: Ringer



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 192 TR-104: VoiceService: VoiceProfile: Line: Ringer

PARAMETER NAME	VALUE
EventNumberOfEntries	This field displays the number of entries in the ringer event table.
DescriptionNumberOfEntries	This field displays the number of entries in the ringer description table.
PatternNumberOfEntries	This field displays the number of entries in the ringer pattern table.

22.14.8 Voice Profile Ringer Event

Use the **Event** screen to view a list of ringer events. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Ringer**.
5. Click **Event** to display the screen.

Figure 346 TR-104: VoiceService: VoiceProfile: Ringer: Event

22.14.9 Voice Profile Ringer Event Setup

Use the detailed **Event** screen to configure ringer event settings.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Ringer**.
5. Click **Event** and a number to display the screen.

Figure 347 TR-104: VoiceService: VoiceProfile: Ringer: Event: Details

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 193 TR-104: VoiceService: VoiceProfile: Ringer: Event: Details

PARAMETER NAME	VALUE
Function	This field displays the name of the event to which the ringer is applied.
RingID	This field displays the index number of the ringer (in the description table) to play for this event.

22.14.10 Voice Profile Ringer Description

Use the **Description** screen to view a list of ringer descriptions. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Ringer**.
5. Click **Description** to display the screen.

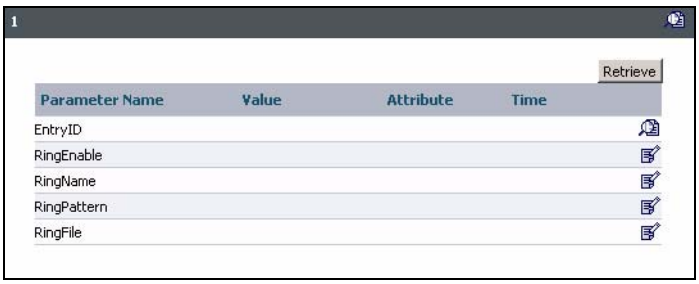
Figure 348 TR-104: VoiceService: VoiceProfile: Ringer: Description

22.14.11 Voice Profile Ringer Description Setup

Use the detailed **Description** screen to configure ringer description event settings.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Ringer**.
5. Click **Description** and a number to display the screen.

Figure 349 TR-104: VoiceService: VoiceProfile: Ringer: Description: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 194 TR-104: VoiceService: VoiceProfile: Ringer: Description: Details

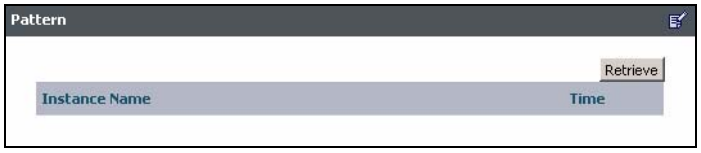
PARAMETER NAME	VALUE
EntryID	This field displays the index number.
RingEnable	This field displays whether the entry is activated or not.
RingName	This field displays the name for this entry.
RingPattern	This field displays the index number in the pattern table that starts the ring pattern.
RingFile	This field displays the name of the ring file downloaded to the device.

22.14.12 Voice Profile Ringer Pattern

Use the **Pattern** screen to view a list of ring patterns. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Ringer**.
5. Click **Pattern** to display the screen.

Figure 350 TR-104: VoiceService: VoiceProfile: Ringer: Pattern

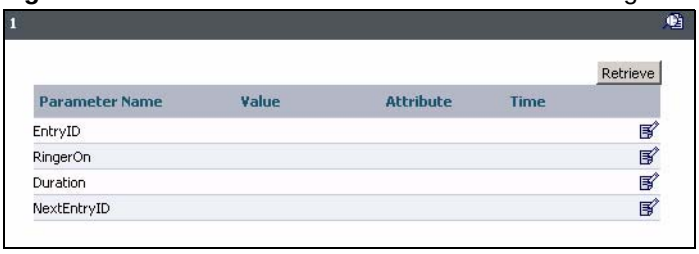


22.14.13 Voice Profile Ringer Pattern Setup

Use the detailed **Pattern** screen to configure ringer pattern settings.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Ringer**.
5. Click **Pattern** and a number to display the screen.

Figure 351 TR-104: VoiceService: VoiceProfile: Ringer: Pattern: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 195 TR-104: VoiceService: VoiceProfile: Ringer: Pattern: Details

PARAMETER NAME	VALUE
EntryID	This field displays the index number of a single phase in the ring pattern.
RingerOn	This field displays whether or not the ring pattern is enabled during a phase.
Duration	This field displays the time (in milliseconds) for this phase of the ring pattern.
NextEntryID	This field displays the index number of the next phase of the ring pattern after the duration of the current phase is completed.

22.14.14 Voice Profile Line Call Features

Use the **CallingFeatures** screen to configure the call feature settings for a VoIP profile.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **CallingFeatures** to display the screen.

Figure 352 TR-104: VoiceService: VoiceProfile: CallFeatures

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 196 TR-104: VoiceService: VoiceProfile: CallingFeatures

PARAMETER NAME	VALUE
CallerIDEnable	This field displays whether the device is to send the caller ID information on outgoing calls.
CallerIDNameEnable	This field displays whether the device is to send the caller name information on outgoing calls.
CallerIDName	This field displays the name to identify the caller on the device.
CallWaitingEnable	This field displays whether the call waiting feature is enabled (**1**) on the device.
CallWaitingStatus	This field displays the status (**Disabled**, **Idle**, **SecondaryRinging**, **SecondaryConnecting** or **SecondaryConnected**) of the call waiting feature.
MaxSessions	This field displays the maximum number of simultaneous conference calls allowed on the device.
ConferenceCallingStatus	This field displays the status of the managed conference calls on the device.
ConferenceCallingSessionCount	This field indicates the number of active conference calls on the device. This field displays **0** to indicate that the device has no call sessions. **1** means a single call is in progress through the device. A number larger than 1 indicates multiple calls in progress through the device.
CallForwardUnconditionalEnable	This field displays whether the call forwarding feature is enabled on the device.
CallForwardUnconditionalNumber	This field displays the number to which all incoming calls are forwarded on the device when the call forwarding feature is enabled.

Table 196 TR-104: VoiceService: VoiceProfile: CallingFeatures (continued)

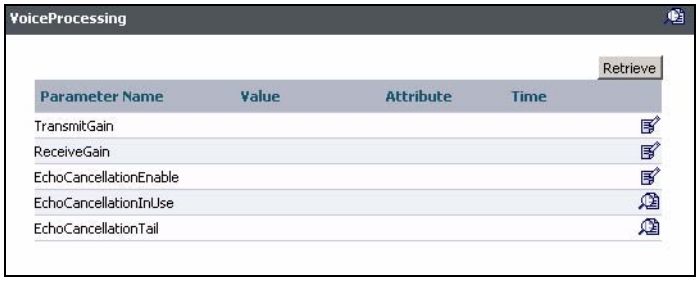
PARAMETER NAME	VALUE
CallForwardOnBusyEnable	This field displays whether the call forwarding feature is enabled on the device when the line is busy.
CallForwardOnBusyNumber	This field displays the number to which all incoming calls are forwarded on the device when CallForwardonBusyEnable is enabled and the line is busy.
CallForwardOnNoAnswerEnable	This field displays whether the call forwarding feature is enabled on the device when the line is busy.
CallForwardOnNoAnswerNumber	This field displays the number to which all incoming calls are forwarded on the device when CallForwardOnNoAnswerEnable is enabled and the line is busy.
CallForwardOnNoAnswerRingCount	This field displays the number of rings before the line is considered busy and the call is forwarded.
CallTransferEnable	This field displays whether the call transfer feature is enabled on the device.
MWIEnable	This field displays whether the Message Waiting Indicator (MWI) feature is enabled on the device. An MWI notifies the user if a voice message or other types of message is waiting.
MessageWaiting	This field indicates whether a message is currently waiting in line.
AnonymousCallBlockEnable	This field displays whether anonymous call blocking is enabled on the device.
AnonymousCalEnable	This field displays whether anonymous call is allowed on the device.
DoNotDisturbEnable	This field displays whether the Do-Not-Disturb feature is enabled on the device.
CallReturnEnable	This field displays whether the call return feature is enabled on the device.
RepeatDialEnable	This field displays whether the re-dial feature is enabled on the device.

22.14.15 Voice Profile Line Voice Processing

Use the **VoiceProcessing** screen to configure voice signal processing settings for the profile.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **VoiceProcessing** to display the screen.

Figure 353 TR-104: VoiceService: VoiceProfile: VoiceProcessing



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 197 TR-104: VoiceService: VoiceProfile: VoiceProcessing

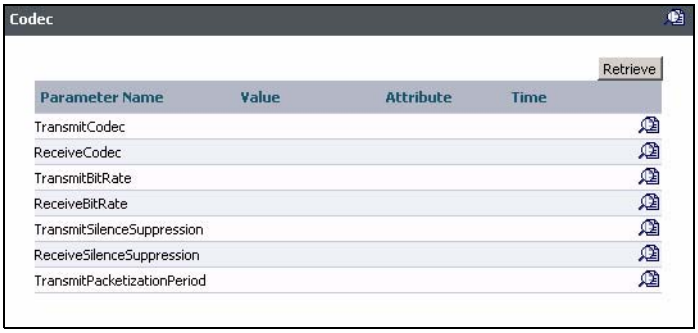
PARAMETER NAME	VALUE
TransmitGain	This field displays the gain (in 0.1dB) to apply to the transmitted voice signal before encoding.
ReceiveGain	This field displays the gain (in 0.1dB) to apply to the received voice signal before decoding.
EchoCancellationEnable	This field displays whether echo cancellation is enabled for this line.
EchoCancellationInUse	This field displays whether echo cancellation is currently in use for this line.
EchoCancellationTail	This field displays the length (in milliseconds) of the echo cancellation for this line.

22.14.16 Line Codec Information

You can view the codec settings of a line in the **Codec** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Codec** to display the screen.

Figure 354 TR-104: VoiceService: VoiceProfile: Line: Codec



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 198 TR-104: VoiceService: VoiceProfile: Line: Codec

PARAMETER NAME	VALUE
TransmitCodec	This field displays the codec the device uses to send voice traffic.
ReceiveCodec	This field displays the codec the device uses to receive voice traffic.
TransmitBitRate	This field displays the transmission rate (in bits per second).
ReceiveBitRate	This field displays the receiving rate (in bits per second).
TransmitSilenceSuppression	This field indicates whether silence suppression is enabled for outgoing voice traffic.

Table 198 TR-104: VoiceService: VoiceProfile: Line: Codec (continued)

PARAMETER NAME	VALUE
ReceiveSilenceSuppression	This field indicates whether silence suppression is enabled for incoming voice traffic.
TransmitPacketizationPeriod	This field displays the packetization in milliseconds for outgoing voice traffic.

22.14.17 Codec List

You can view the status of the received and transmitted codec and the codec list entries in the **Codec** screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Codec**.
5. Click **List** to display the screen.

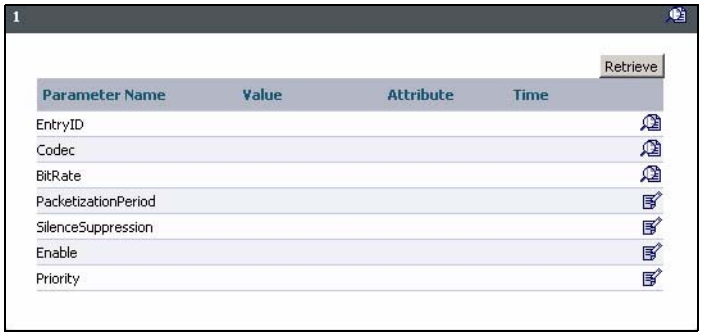
Figure 355 TR-104: VoiceService: VoiceProfile: Line: Codec: List

22.14.18 Codec List Details

Use the detailed **List** screen to view and change an entry in the codec list.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Codec**.
5. Click **List** and a number to display the screen.

Figure 356 TR-104: VoiceService: VoiceProfile: Line: Codec: List: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 199 TR-104: VoiceService: VoiceProfile: Line: Codec: List: Details

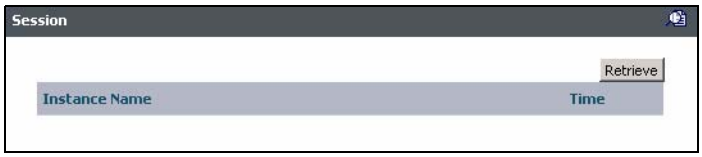
PARAMETER NAME	VALUE
EntryID	This field displays the index number of the entry.
Codec	This field displays the name of the codec for this entry.
BitRate	This field displays the data rate in bits per second.
PacketizationPeriod	This field displays the packetization period(s) (in milliseconds). Multiple options are separated by commas (,).
SilenceSuppression	This field indicates whether silence suppression is enabled.
Enable	This field displays whether this codec entry is activated or not.
Priority	Specify the priority of the codec entry.

22.14.19 Line Session

You can view a list of sessions associated with a line in the **Session** screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Session** to display the screen.

Figure 357 TR-104: VoiceService: VoiceProfile: Line: Session

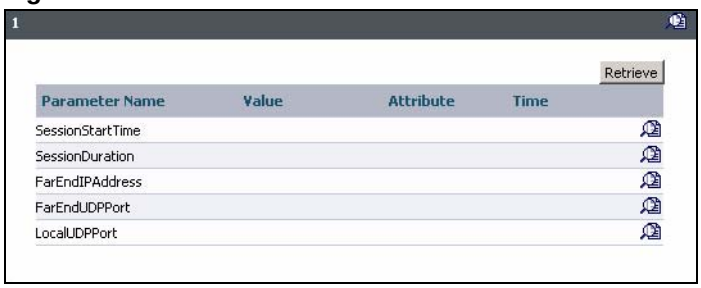


22.14.20 Line Session Details

You can view detailed session information of a line in the detailed **Session** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Session**.
5. Click a number to display the screen.

Figure 358 TR-104: VoiceService: VoiceProfile: Line: Session: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 200 TR-104: VoiceService: VoiceProfile: Line: Session: Details

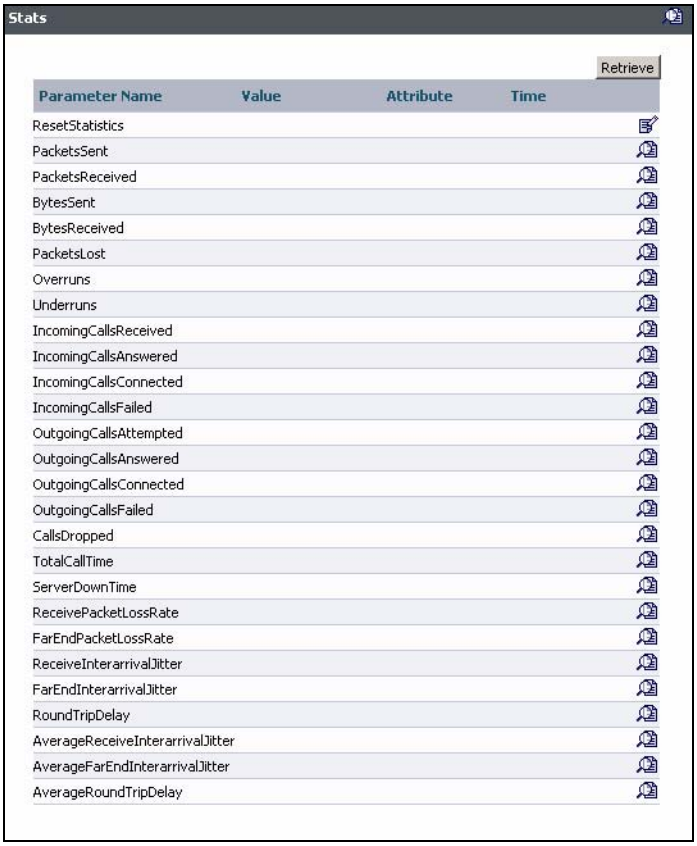
PARAMETER NAME	VALUE
SessionStartTime	This field displays the time the session first started.
SessionDuration	This field displays the time (in seconds) the current session has been up.
FarEndIPAddress	This field displays the IP address of the peer VoIP device.
FarEndUDPPort	This field displays the UDP port number of the peer VoIP device.
LocalUDPPort	This field displays the UDP port number on the device.

22.14.21 Line Statistics

You can view the codec line statistics in the **Stats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **VoiceProfile**.
3. Click a number and **Line**.
4. Click a number and **Stats** to display the screen.

Figure 359 TR-104: VoiceService: VoiceProfile: Line: Stats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 201 TR-104: VoiceService: VoiceProfile: Line: Stats

LABEL	DESCRIPTION
ResetStatistics	Select **Enable** and click **Apply** to reset the counters. Select **Disable** to keep the counters.
PacketsSent	This field displays the number of packets sent for this line.
PacketsReceived	This field displays the number of packets received for this line.
BytesSent	This field displays the number of bytes sent for this line.
BytesReceived	This field displays the number of bytes received for this line.
PacketsLost	This field displays the number packets lost through transmission.
Overruns	This field displays the number of times the received jitter buffer has overrun for this line.
Underruns	This field displays the number of times the received jitter buffer has underrun for this line.
IncomingCallsReceived	This field displays the number of incoming calls received.
IncomingCallsAnswered	This field displays the number of incoming calls answered.
IncomingCallsConnected	This field displays the number of incoming calls that have completed the signaling setup process.

Table 201 TR-104: VoiceService: VoiceProfile: Line: Stats (continued)

LABEL	DESCRIPTION
IncomingCallsFailed	This field displays the number of incoming calls that failed to complete the signaling setup process.
OutgoingCallsAttempted	This field displays the number of outgoing calls tried.
OutgoingCallsAnswered	This field displays the number of outgoing calls answered.
OutgoingCallsConnected	This field displays the number of outgoing calls that have completed the signaling setup process.
OutgoingCallsFailed	This field displays the number of outgoing calls that failed to complete the signaling setup process.
CallsDropped	This field displays the number of calls dropped.
TotalCallTime	This field displays the call duration (in seconds).
ServerDownTime	This field displays the number of seconds the device is to wait before declaring the SIP server is down.
ReceivePacketLossRate	This field displays the percentage rate of receive packet lost currently on the device.
FarEndPacketLossRate	This field displays the current percentage rate of packet lost as reported from the far-end device.
ReceiveInterarrivalJitter	This field displays the current interarrival jitter in milliseconds.
FarEndInterarrivalJitter	This field displays the current interarrival jitter in milliseconds as reported by the far-end device.
RoundTripDelay	This field displays the current round trip delay in milliseconds.
AverageReceiveInterarrivalJitter	This field displays the interarrival jitter in milliseconds since the beginning of the current call.
AverageFarEndInterarrivalJitter	This field displays the interarrival jitter in milliseconds since the beginning of the current call as reported by the far-end device.
AverageRoundTripDelay	This field displays the current round trip delay in milliseconds since the beginning of the current call.

22.15 PhyInterface

Use the **PhyInterface** screen to view a list of interfaces associated with a physical FXS (Foreign eXchange Station) port. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**. Click a number and **PhyInterface** to display the screen.

Figure 360 TR-104: VoiceService: PhyInterface

22.15.1 PhyInterface Details

You can view detailed information (such as the port number and the interface ID) about a physical interface in the detailed **PhyInterface** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **PhyInterface**.
3. Click a number to display the screen.

Figure 361 TR-104: VoiceService: PhyInterface: Details

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 202 TR-104: VoiceService: PhyInterface: Details

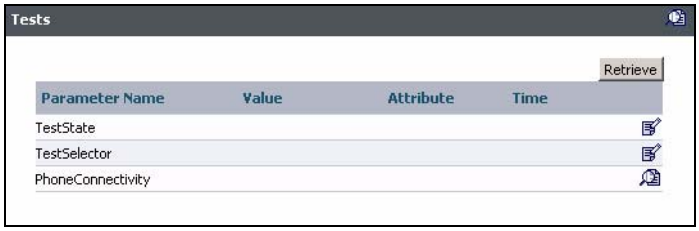
PARAMETER NAME	VALUE
PhyPort	This field displays the physical port number on the device.
InterfaceID	This field displays the unique ID for the physical port.
Description	This field displays a description for the physical port.

22.15.2 PhyInterface Tests

You can view the voice line test results in the **Tests** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **VoiceService**.
2. Click a number and **PhyInterface**.
3. Click a number and **Tests** to display the screen.

Figure 362 TR-104: VoiceService: PhyInterface: Tests



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 203 TR-104: VoiceService: PhyInterface: Tests

PARAMETER NAME	VALUE
TestState	This field displays the status of the line test.
TestSelector	This field displays the name of the test to perform on the line.
PhoneConnectivity	This field displays whether at least one phone line associated to this physical interface is connected.

PART VII
STB 1.0 (TR-135)

This part contains the following chapters.

- STB Service (405)

23

STB Service

This chapter describes the screens you use to configure and view STB settings.

23.1 Services

Display the **Services** screen to view the number of STB service entries on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered STB device in the Device List window and click **Data Model** > **Device** > **Services** to display the screen.

Figure 363 TR-135: Services

23.1.1 STB Service Details

Display the detailed **STBService** screen to enable or disable an STBService instance. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService** and click an index number to display the screen.

Figure 364 TR-135: STBService

23.2 STB Capabilities

You can view the STB functions available on the device in the **Capabilities** screen.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**. Click a number and **Capabilities** to display the screen.

Figure 365 TR-135: STBService: Capabilities

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 204 TR-135: VoiceService: Capabilities

PARAMETER NAME	VALUE
MaxActiveAVStreams	This displays the maximum number of AV streams.
MaxActiveAVPlayers	This displays the maximum number of AV players.

23.2.1 DVBT Setup

You can view and configure DVBT (Digital Video Broadcasting - Terrestrial) settings in the **DVBT** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **FrontEnd** > **DVBT** to display the screen.

Figure 366 TR-135: STBService: Capabilities: DVBT

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 205 TR-135: STBService: Capabilities: DVBT

PARAMETER NAME	VALUE
MaxActiveDVBTStreams	This displays the maximum number of DVBT (Digital Video Broadcasting - Terrestrial) streams.
MaxLogicalChannels	This displays the maximum number of logical channels.

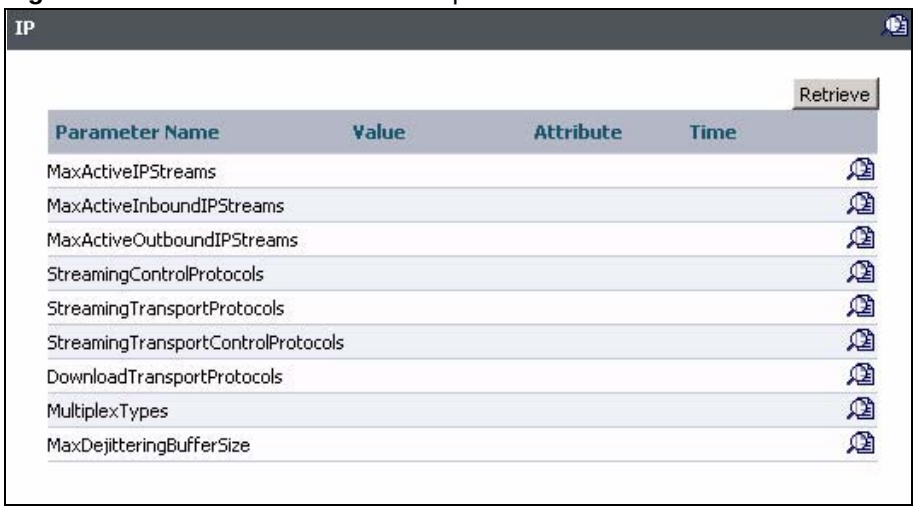
23.2.2 IP Setup

You can view and configure data transmission settings for AV streaming in the **IP** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.

2 Click a number and **Capabilities.**
3 Click **FrontEnd** > **IP** to display the screen.

Figure 367 TR-135: STBService: Capabilities: IP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 206 TR-135: STBService: Capabilities: IP

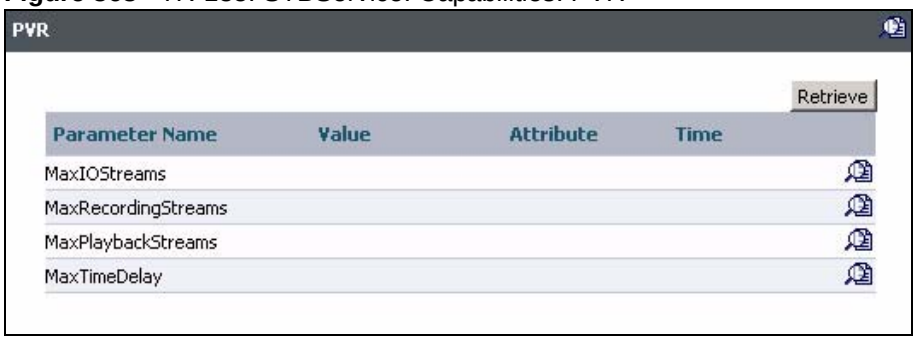
PARAMETER NAME	VALUE
MaxActiveIPStreams	Maximum number of simultaneous active AV streams supported by the IP front end.
MaxActiveInboundIPStreams	Maximum number of simultaneous active inbound AV streams supported by the IP front end.
MaxActiveOutboundIPStreams	Maximum number of simultaneous active outbound AV streams supported by the IP front end.
StreamingControlProtocols	This displays the streaming control protocols supported.
StreamingTransportProtocols	This displays the network protocols supported for AV streaming.
StreamingTransportControlProtocols	This displays the transport control protocols supported for AV streaming in combination with RTP.
DownloadTransportProtocols	This displays the network protocols supported for AV download.
MultiplexTypes	This displays the AV multiplex types supported by the IP front end.
MaxDejitteringBufferSize	This displays the maximum de-jittering buffer size, in bytes,

23.2.3 PVR Setup

You can view and configure PVR (Personal Video Recorder) settings in the **PVR** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **Capabilities.**
3 Click **PVR** to display the screen.

Figure 368 TR-135: STBService: Capabilities: PVR



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 207 TR-135: STBService: Capabilities: PVR

PARAMETER NAME	VALUE
MaxIOStreams	This displays the maximum number of AV streams that the PVR can record and play back simultaneously.
MaxRecordingStreams	This displays the maximum number of AV streams that the PVR can record simultaneously.
MaxPlaybackStreams	This displays the maximum number of AV streams that the PVR can play back simultaneously.
MaxTimeDelay	This displays the maximum time delay, in seconds, that the PVR time-shift mode can support.

23.2.4 Audio Decoder Setup

You can view and configure audio decoder settings in the **Audio Decoder** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Audio Decoder** to display the screen.

Figure 369 TR-135: STBService: Capabilities: Audio Decoder

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 208 TR-135: STBService: Capabilities: Audio Decoder

PARAMETER NAME	VALUE
AudioStandards	This displays the audio standards supported by the STB.

23.2.5 Video Decoder Setup

You can view and configure video decoder settings in the **Video Decoder** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** to display the screen.

Figure 370 TR-135: STBService: Capabilities: Video Decoder

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 209 TR-135: STBService: Capabilities: Video Decoder

PARAMETER NAME	VALUE
VideoStandards	This displays the video standards supported by the STB.

23.2.6 MPEG2 Part 2 Setup

You can view and configure MPEG2 Part 2 settings in the **MPEG2Part2** screen. This screen displays supported MPEG2 profiles. It also displays the set of audio standards supported when MPEG2 Part 2 is used.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** > **MPEG2Part2** to display the screen.

Figure 371 TR-135: STBService: Capabilities: MPEG2Part2

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 210 TR-135: STBService: Capabilities: MPEG2Part2

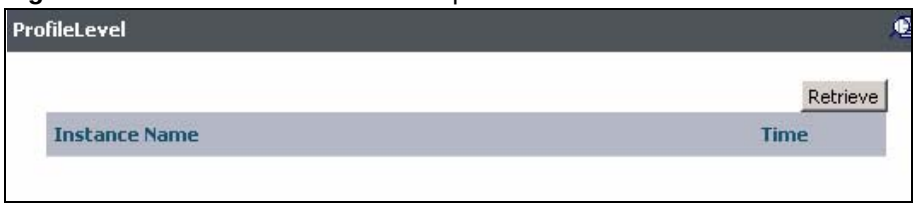
PARAMETER NAME	VALUE
AudioStandards	This displays the MPEG2 Part 2 audio standards supported by the STB.
ProfileLevelNumberOfEntries	This displays the number of profile levels.

23.2.7 MPEG2 Part 2 Profile Levels

You can view and configure MPEG2 Part 2 profile levels in the **ProfileLevel** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** > **MPEG2Part2** > **ProfileLevel** to display the screen.

Figure 372 TR-135: STBService: Capabilities: MPEG2Part2 ProfileLevel

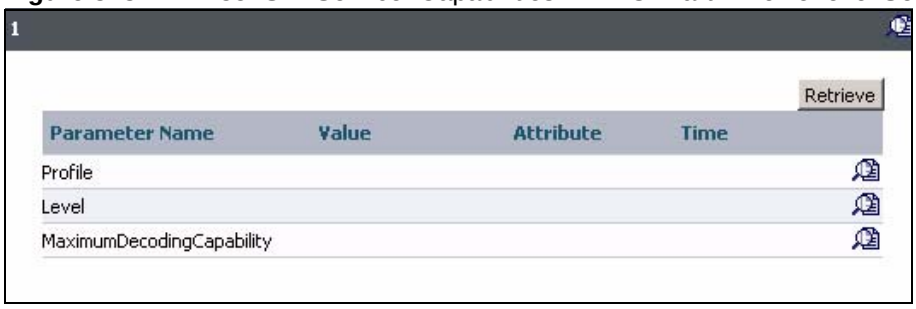


23.2.8 MPEG2 Part 2 Profile Level Settings

You can view and configure each MPEG2 Part 2 profile and level. Each is a combination of profile and level.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** > **MPEG2Part2** > **ProfileLevel**. Click a number to display the screen.

Figure 373 TR-135: STBService: Capabilities: MPEG2Part2 ProfileLevel Settings



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 211 TR-135: STBService: Capabilities: MPEG2Part2 ProfileLevel Settings

PARAMETER NAME	VALUE
Profile	This displays the MPEG2 part 2 profile.
Level	This displays the MPEG2 part 2 level.
MaximumDecodingCapability	This displays the maximum decoding capability for this video standard in kilobits per second.

23.2.9 MPEG4 Part 2 Setup

You can view and configure MPEG4 Part 2 settings in the **MPEG2Part2** screen. This screen displays the supported MPEG4 profiles. It also displays the set of audio standards supported when MPEG4 Part 2 is used.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** > **MPEG4Part2** to display the screen.

Figure 374 TR-135: STBService: Capabilities: MPEG4Part2

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 212 TR-135: STBService: Capabilities: MPEG4Part2

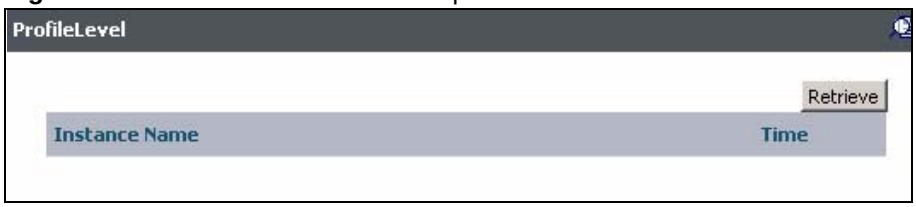
PARAMETER NAME	VALUE
AudioStandards	This displays the MPEG4 Part 2 audio standards supported by the STB.
ProfileLevelNumberOfEntries	This displays the number of profile levels.

23.2.10 MPEG4 Part 2 Profile Levels

You can view and configure MPEG4 Part 2 Profile Levels in the **ProfileLevel** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** > **MPEG4Part2** > **ProfileLevel** to display the screen.

Figure 375 TR-135: STBService: Capabilities: MPEG4Part2 ProfileLevel

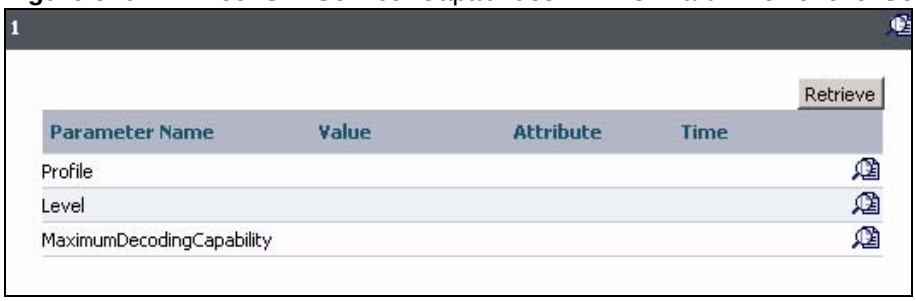


23.2.11 MPEG4 Part 2 Profile Level Settings

You can view and configure each MPEG4 Part 2 profile and level. Each is a combination of profile and level.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** > **MPEG4Part2** > **ProfileLevel**. Click a number to display the screen.

Figure 376 TR-135: STBService: Capabilities: MPEG4Part2 ProfileLevel Settings



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 213 TR-135: STBService: Capabilities: MPEG4Part2 ProfileLevel Settings

PARAMETER NAME	VALUE
Profile	This displays the MPEG4 part 2 profile.
Level	This displays the MPEG4 part 2 level.
MaximumDecodingCapability	This displays the maximum decoding capability for this video standard in kilobits per second.

23.2.12 MPEG4 Part 10 Setup

You can view and configure MPEG4 Part 10 settings in the **MPEG2Part2** screen. This screen displays the set of supported MPEG4 profiles. It also displays the set of audio standards supported when MPEG4 Part 10 is used.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** > **MPEG4Part10** to display the screen.

Figure 377 TR-135: STBService: Capabilities: MPEG4Part10

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 214 TR-135: STBService: Capabilities: MPEG4Part10

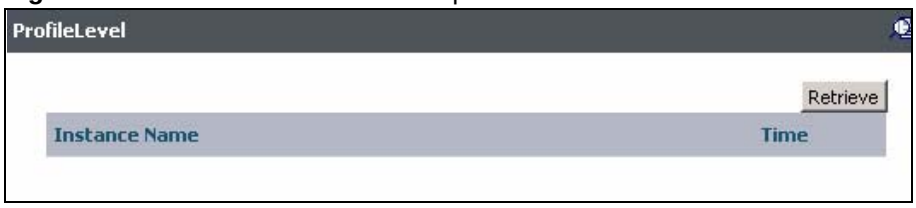
PARAMETER NAME	VALUE
AudioStandards	This displays the MPEG4 Part 10 audio standards supported by the STB.
ProfileLevelNumberOfEntries	This displays the number of profile levels.

23.2.13 MPEG4 Part 10 Profile Levels

You can view and configure MPEG4 Part 10 Profile Levels in the **ProfileLevel** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **Video Decoder** > **MPEG4Part10** > **ProfileLevel** to display the screen.

Figure 378 TR-135: STBService: Capabilities: MPEG4Part10 ProfileLevel

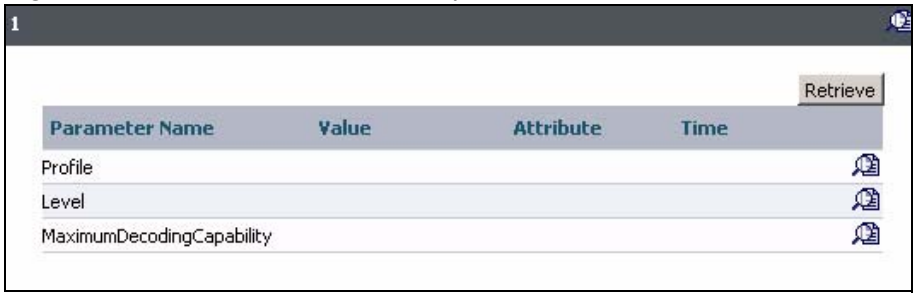


23.2.14 MPEG4 Part 10 Profile Level Settings

You can view and configure each MPEG4 Part 10 profile and level. Each is a combination of profile and level.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **Video Decoder** > **MPEG4Part10** > **ProfileLevel**. Click a number to display the screen.

Figure 379 TR-135: STBService: Capabilities: MPEG4Part10 ProfileLevel Settings



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 215 TR-135: STBService: Capabilities: MPEG4Part10 ProfileLevel Settings

PARAMETER NAME	VALUE
Profile	This displays the MPEG4 part 10 profile.
Level	This displays the MPEG4 part 10 level.
MaximumDecodingCapability	This displays the maximum decoding capability for this video standard in kilobits per second.

23.2.15 SMPTEVC1 Setup

You can view and configure SMPTE (Society of Motion Picture and Television Engineers) VC-1settings in the **SMPTEVC1** screen. This screen displays the set of supported SMPTE VC-1 profiles. It also displays the set of audio standards supported when SMPTE VC-1 is used.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities.**
3. Click **Video Decoder** > **SMPTEVC1** to display the screen.

Figure 380 TR-135: STBService: Capabilities: SMPTE VC-1

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 216 TR-135: STBService: Capabilities: SMPTE VC-1

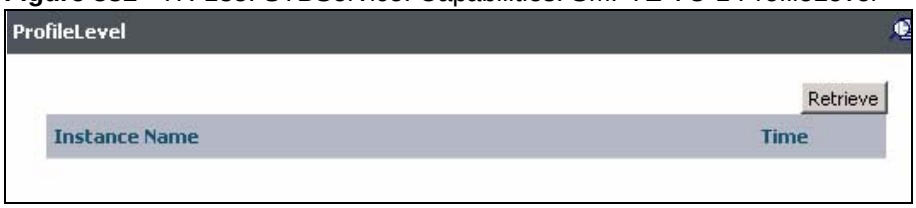
PARAMETER NAME	VALUE
AudioStandards	This displays the SMPTE VC-1 audio standards supported by the STB.
ProfileLevelNumberOfEntries	This displays the number of profile levels.

23.2.16 SMPTE VC-1 Profile Levels

You can view and configure SMPTE VC-1 Profile Levels in the **ProfileLevel** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **Video Decoder** > **SMPTEVC1** > **ProfileLevel** to display the screen.

Figure 381 TR-135: STBService: Capabilities: SMPTE VC-1 ProfileLevel

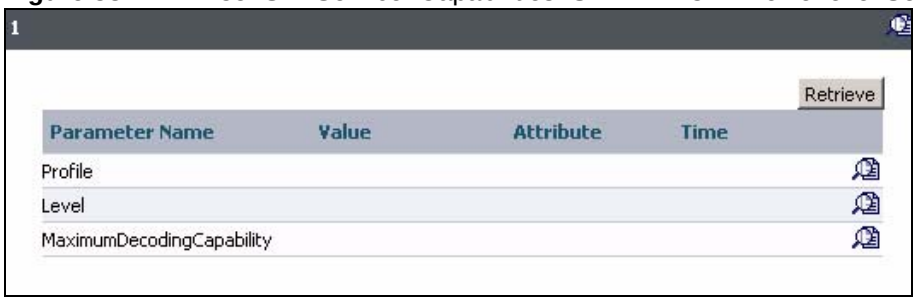


23.2.17 SMPTE VC-1 Profile Level Settings

You can view and configure each SMPTE VC-1 profile and level. Each is a combination of profile and level.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **Video Decoder** > **SMPTE VC-1** > **ProfileLevel**. Click a number to display the screen.

Figure 382 TR-135: STBService: Capabilities: SMPTE VC-1 ProfileLevel Settings



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 217 TR-135: STBService: Capabilities: SMPTE VC-1 ProfileLevel Settings

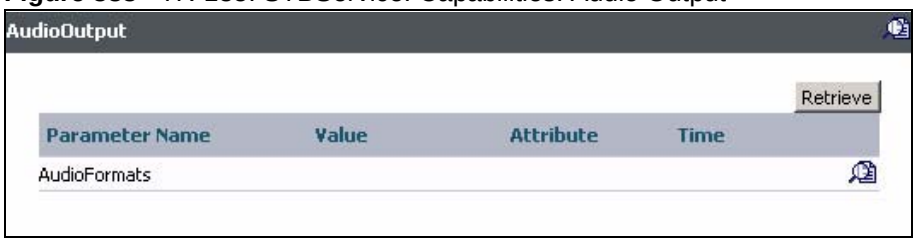
PARAMETER NAME	VALUE
Profile	This displays the SMPTE VC-1 profile.
Level	This displays the SMPTE VC-1 level.
MaximumDecodingCapability	This displays the maximum decoding capability for this video standard in kilobits per second.

23.2.18 Audio Output Setup

You can view and configure audio output capabilities in the **Audio Output** screen. These may include output formats, output connectors, and copy protection.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **Audio Output** to display the screen.

Figure 383 TR-135: STBService: Capabilities: Audio Output



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 218 TR-135: STBService: Capabilities: Audio Output

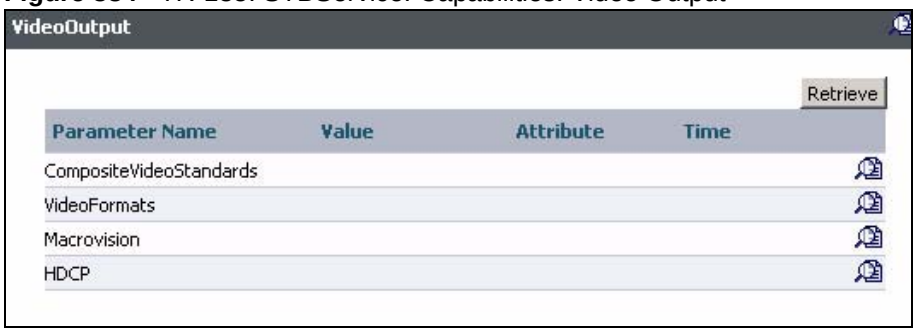
PARAMETER NAME	VALUE
AudioFormats	This displays the audio output formats supported by the STB.

23.2.19 Video Output Setup

You can view and configure video output capabilities in the **Video Output** screen. These may include output formats, output connectors, and copy protection.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **Video Output** to display the screen.

Figure 384 TR-135: STBService: Capabilities: Video Output



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 219 TR-135: STBService: Capabilities: Video Output

PARAMETER NAME	VALUE
CompositeVideoStandards	This displays analog composite video standards supported for video output. This applies to CVBS video output only.
VideoFormats	This displays the video output formats supported by the STB.
Macrovision	This displays the supported version of the Macrovision digital content protection standard.
HDCP	This displays the supported version of the HDCP (High-bandwidth Digital Content Protection) standard.

23.2.20 CA Setup

You can view and configure conditional access settings in the **CA** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **CA** to display the screen.

Figure 385 TR-135: STBService: Capabilities: Conditional Access

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 220 TR-135: STBService: Capabilities: Conditional Access

PARAMETER NAME	VALUE
CASystems	This displays the names of supported conditional access systems.

23.2.21 DRM Setup

You can view and configure digital rights management settings in the **DRM** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **DRM** to display the screen.

Figure 386 TR-135: STBService: Capabilities: Digital Rights Management

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 221 TR-135: STBService: Capabilities: Digital Rights Management

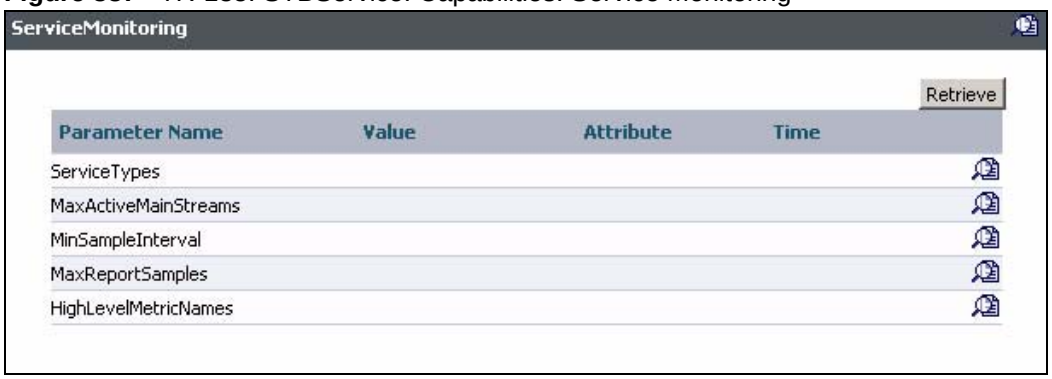
PARAMETER NAME	VALUE
DRMSystems	This displays the names of supported digital rights management systems.

23.2.22 Service Monitoring Setup

You can view and configure service monitoring settings in the **ServiceMonitoring** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **ServiceMonitoring** to display the screen.

Figure 387 TR-135: STBService: Capabilities: Service Monitoring



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 222 TR-135: STBService: Capabilities: Service Monitoring

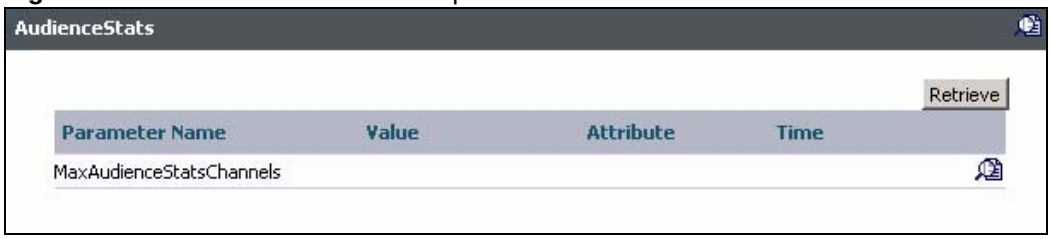
PARAMETER NAME	VALUE
ServiceTypes	This displays the supported service types, each of which relates to an AV stream source.
MaxActiveMainStreams	This displays the maximum number of AV main streams for which the STB can collect statistics simultaneously.
MinSampleInterval	This displays the minimum sample interval in seconds that the STB must be able to support.
MaxReportSamples	This displays the maximum number of samples of each statistic that the STB is able to store and report.
HighLevelMetricNames	This displays the supported high-level metrics.

23.2.23 Audience Statistics Setup

You can view and configure audience statistics settings in the **AudienceStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Capabilities**.
3. Click **AudienceStats** to display the screen.

Figure 388 TR-135: STBService: Capabilities: Audience Statistics



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 223 TR-135: STBService: Capabilities: Audience Statistics

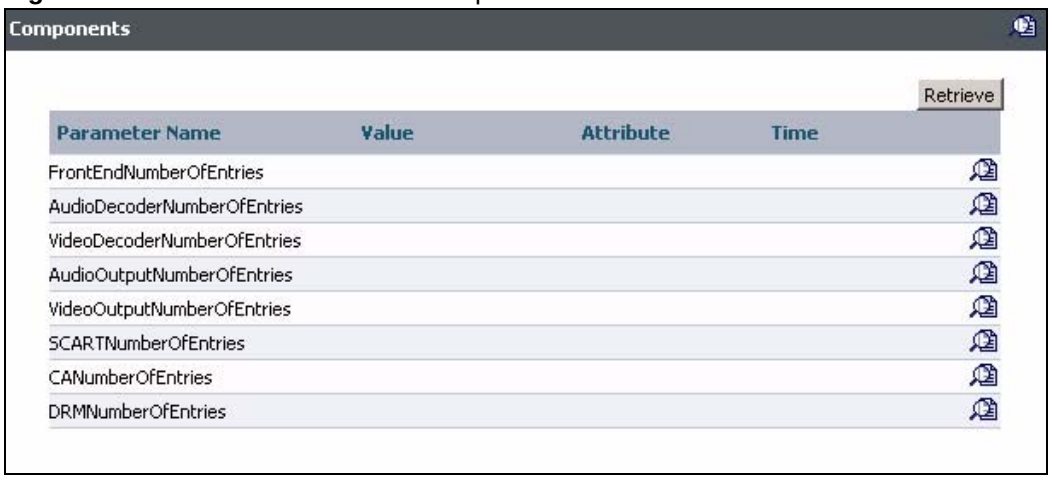
PARAMETER NAME	VALUE
MaxAudienceStatsChannels	This displays the maximum number of audience statistics channels that the STB must support.

23.3 STB Components

You can view the STB components available on the device in the **Components** screen.

Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**. Click a number and **Components** to display the screen.

Figure 389 TR-135: STBService: Components



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 224 TR-135: VoiceService: Components

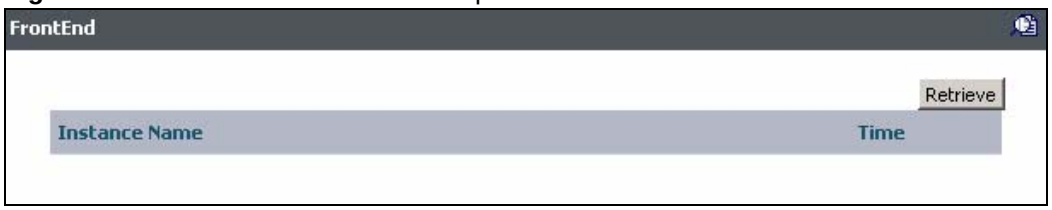
PARAMETER NAME	VALUE
FrontEndNumberOfEntries	This displays the number of FrontEnd instances.
AudioDecoderNumberOfEntries	This displays the number of AudioDecoder instances.
VideoDecoderNumberOfEntries	This displays the number of VideoDecoder instances.
AudioOutputNumberOfEntries	This displays the number of AudioOutput instances.
VideoOutputNumberOfEntries	This displays the number of VideoOutput instances.
SCARTNumberOfEntries	This displays the number of SCART instances.
CANumberOfEntries	This displays the number of CA instances.
DRMNumberOfEntries	This displays the number of DRM instances.

23.3.1 Front End

You can view and configure front end settings.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components.**
3. Click **FrontEnd** to display the screen.

Figure 390 TR-135: STBService: Components: FrontEnd

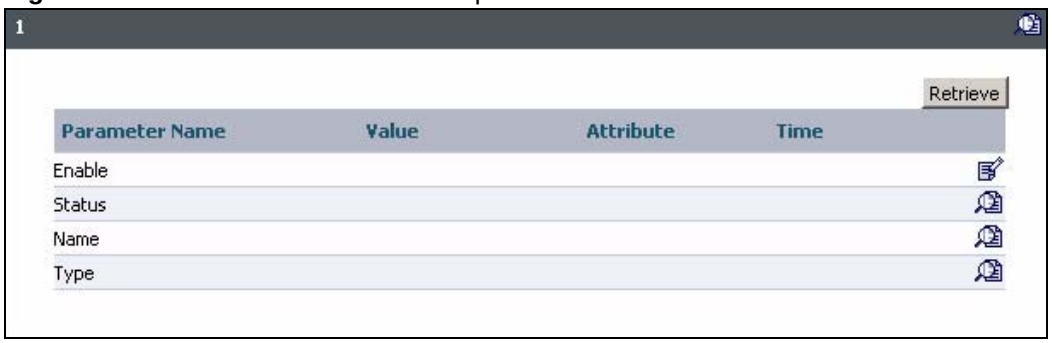


23.3.2 Front End Settings

You can view and configure front end settings for a device in the **FrontEnd** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components.**
3. Click **FrontEnd** and a number to display the screen.

Figure 391 TR-135: STBService: Components: Device FrontEnd



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 225 TR-135: STBService: Components: Device FrontEnd

PARAMETER NAME	VALUE
Enable	This displays whether the front end is active or inactive.
Status	This displays the status of the front end.
Name	This is the name associated with this front end.
Type	This displays the type of the front end.

23.3.3 DVBT Modulation Settings

You can view and configure DVBT (Digital Video Broadcasting – Terrestrial) modulation settings for a device in the **Modulation** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components.**
3. Click **FrontEnd**.
4. Click **DVBT** > **Modulation** to display the screen.

Figure 392 TR-135: STBService: Components: DVBT Modulation

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 226 TR-135: STBService: Components: DVBT Modulation

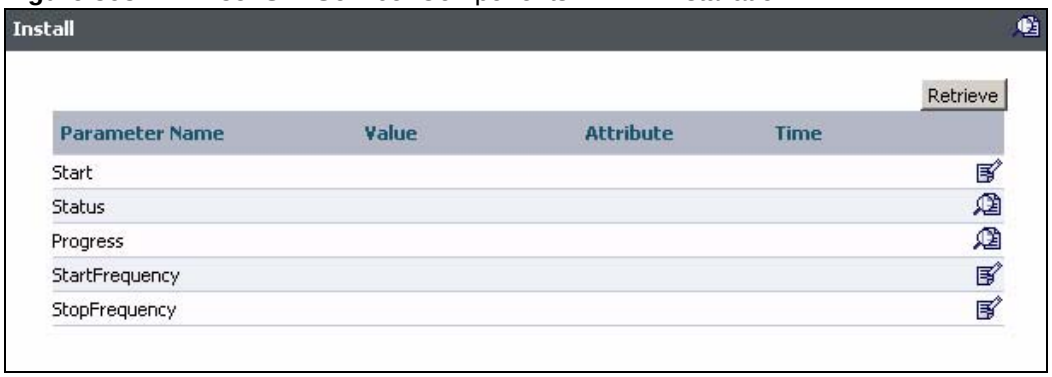
PARAMETER NAME	VALUE
Frequency	Indicates the current frequency in kHz.
ChannelBandwidth	Indicates the channel bandwidth in use.
Constellation	Indicates the current constellation in use.
HierarchicalInformation	Hierarchical how noise-immune the High Priority Modulation is.
CodeRateHP	Indicates the current HP code rate in use.
CodeRateLP	Indicates the current LP code rate in use.
GuardInterval	Indicates the current guard interval in use.
TransmissionMode	Indicates the number of carriers in an OFDM (Orthogonal frequency-division multiplexing) frame.
SNR	This displays the signal-to-noise ratio.
BER	This displays the bit error rate.
CBER	This displays the corrected bit error rate.
Locked	Indicates whether or not the tuner is locked to a specific frequency.

23.3.4 DVBT Installation Settings

You can view and configure DVBT (Digital Video Broadcasting – Terrestrial) installation settings for a device in the **Install** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components.**
3. Click **FrontEnd**.
4. Click **DVBT** > **Install** to display the screen.

Figure 393 TR-135: STBService: Components: DVBT Installation



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 227 TR-135: STBService: Components: DVBT Installation

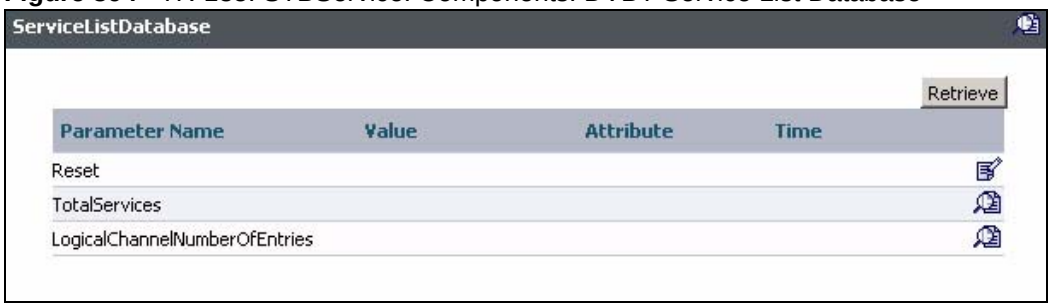
PARAMETER NAME	VALUE
Start	This displays whether the device is scanning for services.
Status	This displays the status of the scanning process.
Progress	This displays the progress in percent of the scanning process.
StartFrequency	This displays the frequency (in kHz) at which to start the scanning process.
StopFrequency	This displays the frequency (in kHz) at which to stop the scanning process.

23.3.5 DVBT Service List Database Settings

You can view and configure DVBT service list database settings for a device in the **ServiceListDatabase** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **DVBT** > **ServiceListDatabase** to display the screen.

Figure 394 TR-135: STBService: Components: DVBT Service List Database



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 228 TR-135: STBService: Components: DVBT Service List Database

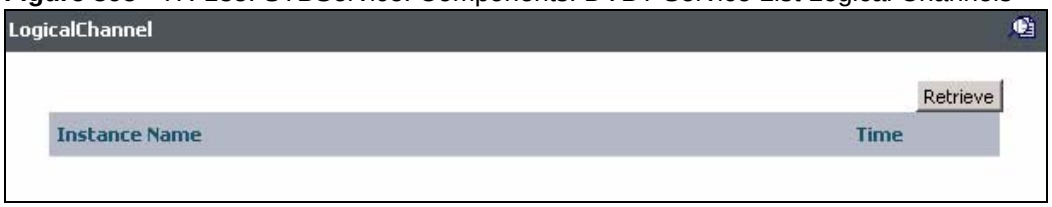
PARAMETER NAME	VALUE
Reset	This resets the service list database. When you read the device state, this status is always false.
TotalServices	This displays the total number of services defined in the service list database.
LogicalChannelNumberOfEntries	This displays the number of logical channels in the service list database.

23.3.6 DVBT Service List Database Logical Channels

You can the view DVBT service list database's logical channels.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **DVBT** > **ServiceListDatabase** > **LogicalChannel** to display the screen.

Figure 395 TR-135: STBService: Components: DVBT Service List Logical Channels



23.3.7 DVBT Service List Database Logical Channels Settings

You can view DVBT service list database logical channel settings in the **LogicalChannel** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **DVBT** > **ServiceListDatabase** > **LogicalChannel** and click a number to display the screen.

Figure 396 TR-135: STBService: Components: DVBT Service List Channels: Entry

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 229 TR-135: STBService: Components: DVBT Service List Channels: Entry

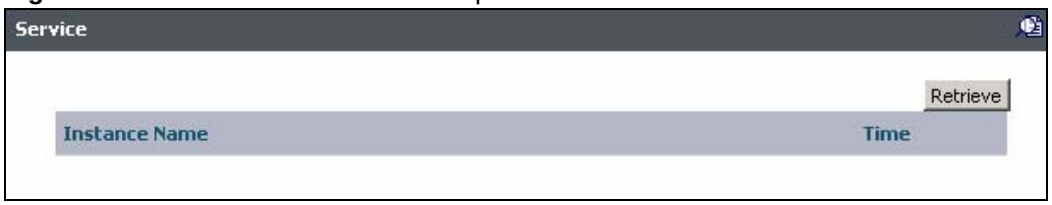
PARAMETER NAME	VALUE
LogicalChannelNumber	This displays the number of logical channels.
ServiceNumberOfEntries	This displays the number of services associated with this logical channel.

23.3.8 DVBT Service List Database Logical Channel Services

You can view DVBT service list's logical channel services.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **DVBT** > **ServiceListDatabase** > **LogicalChannel** and click a number.
5. Click **Service** to display the screen.

Figure 397 TR-135: STBService: Components: DVBT Service List Channel: Services

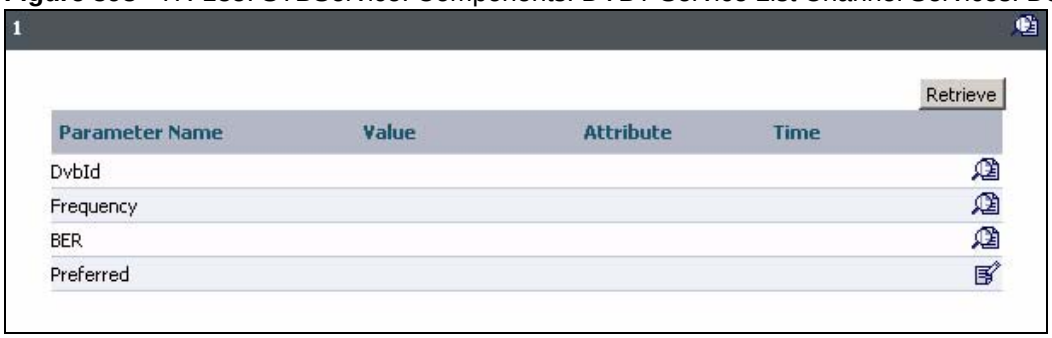


23.3.9 DVBT Service List Database Logical Channel Settings Details

You can view DVBT service list database logical channel service settings for a device in the **Services** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **DVBT** > **ServiceListDatabase** > **LogicalChannel** and click a number.
5. Click **Service** and click a number to display the screen.

Figure 398 TR-135: STBService: Components: DVBT Service List Channel Services: Device



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 230 TR-135: STBService: Components: DVBT Service List Channel Services: Device

PARAMETER NAME	VALUE
DvbId	This displays an ID that uniquely identifies the service in the service list database.
Frequency	This displays the transmitter frequency (in kHz) for this service.
BER	This displays the Bit Error Ratio before correction.
Preferred	When this is active, this identifies this service as the preferred service for this logical channel.

23.3.10 DVBT Logical Channel Connections

You can view and configure DVB-T channel connections in the **LogicalChannelConnect** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **DVBT** > **LogicalChannelConnect** to display the screen.

Figure 399 TR-135: STBService: Components: DVBT Logical Channel Connections

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 231 TR-135: STBService: Components: DVBT Logical Channel Connections

PARAMETER NAME	VALUE
LogicalChannelNumber	This displays the logical channel number to which the channel's preferred service will be connected.

23.3.11 DVBT Service Connections

You can view and configure DVB-T service connections in the **ServiceConnect** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **DVBT** > **ServiceConnect** to display the screen.

Figure 400 TR-135: STBService: Components: DVBT Service Connections

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 232 TR-135: STBService: Components: DVBT Service Connections

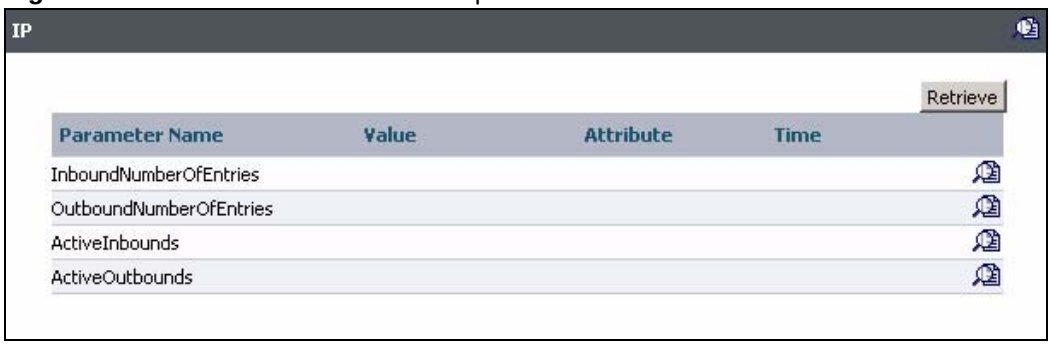
PARAMETER NAME	VALUE
DvbId	This displays the ID of the service to which the channel connects.

23.3.12 Front End IP Setup

You can view and configure front end data transmission settings in the **IP** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **IP** to display the screen.

Figure 401 TR-135: STBService: Components: IP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 233 TR-135: STBService: Components: IP

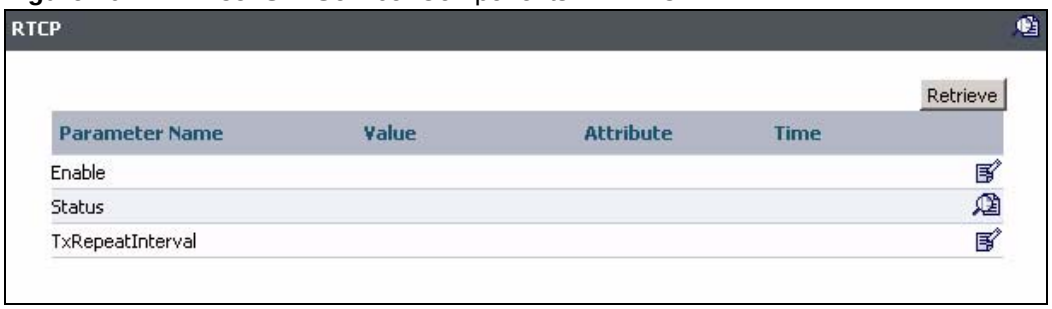
PARAMETER NAME	VALUE
InboundNumberOfEntries	This displays the number of inbound instances.
OutboundNumberOfEntries	This displays the number of outbound instances.
ActiveInbounds	This displays the number of active inbound streams.
ActiveOutbounds	This displays the number of active outbound streams.

23.3.13 Front End RTCP Setup

You can view and configure front end RTCP (RTP Control Protocol) settings in the **RTCP** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **IP** > **RTCP** to display the screen.

Figure 402 TR-135: STBService: Components: IP: RTCP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 234 TR-135: STBService: Components: IP: RTCP

PARAMETER NAME	VALUE
Enable	This displays whether RTCP receiver report generation is enabled.
Status	This displays the status of RTCP receiver report generation.
TxRepeatInterval	This displays the transmission repeat interval in milliseconds.

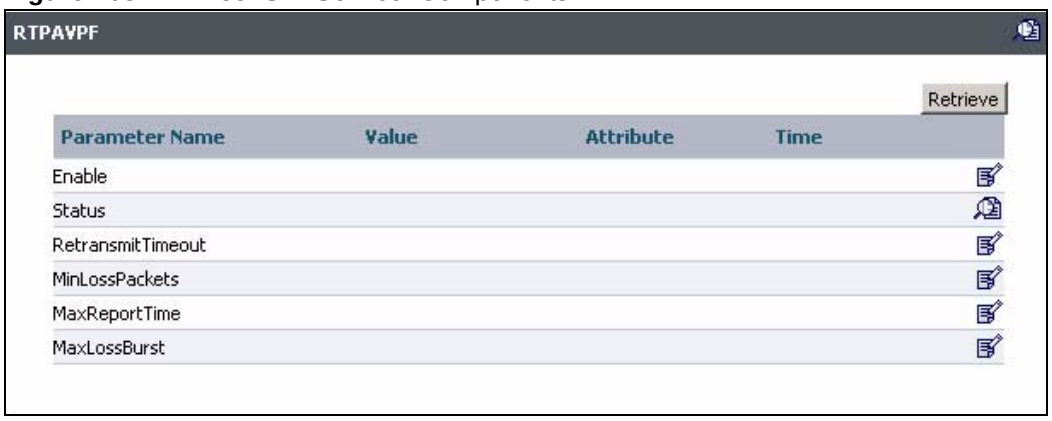
23.3.14 Front End RTP AVPF Setup

You can view and configure front end RTP AVPF settings in the **RTPAVPF** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.

4 Click **IP** > **RTPAVPF** to display the screen.

Figure 403 TR-135: STBService: Components: IP: RTPAPVF



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 235 TR-135: STBService: Components: IP: RTPAPVF

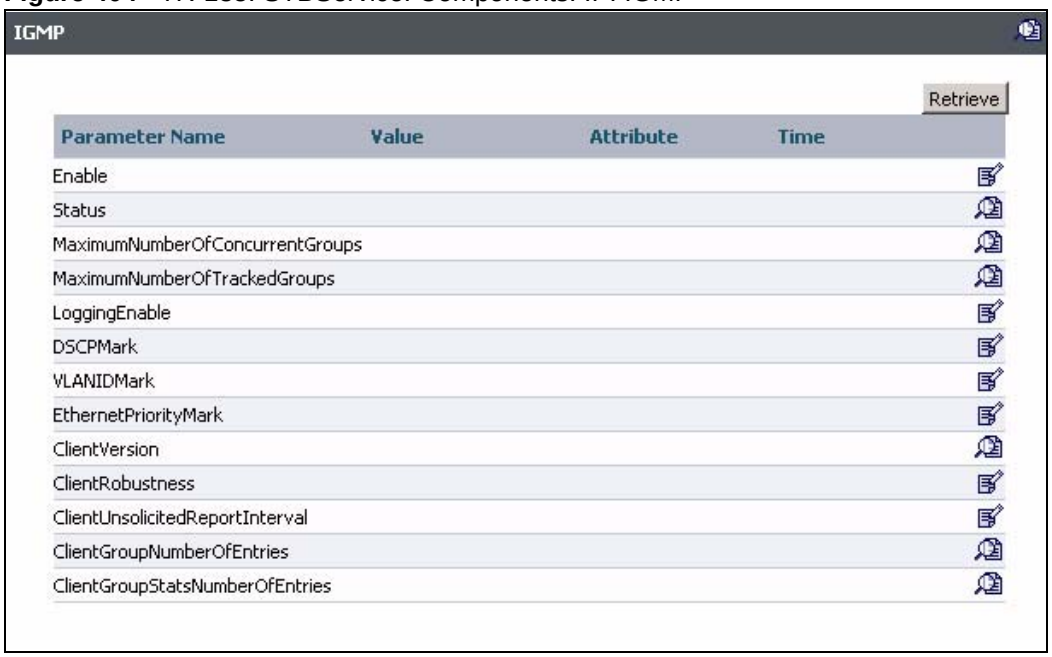
PARAMETER NAME	VALUE
Enable	This displays whether RTP AVPF receiver report generation is enabled.
Status	This displays the status of RTP AVPF receiver report generation.
RetransmitTimeout	This displays the time (in milliseconds) the receiver waits for a retransmitted packet before considering it lost.
MinLossPackets	This displays the minimum number of packets the receiver waits before issuing a retransmission request.
MaxReportTime	This displays the maximum time in milliseconds the receiver waits between a lost packet and the generation of a retransmission request.
MaxLossBurst	This displays the maximum number of consecutive lost packets for which the receiver attempts recovery.

23.3.15 Front End IGMP Setup

You can view and configure front end IGMP settings in the **IGMP** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **Components**.
3 Click **FrontEnd**.
4 Click **IP** > **IGMP** to display the screen.

Figure 404 TR-135: STBService: Components: IP: IGMP



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 236 TR-135: STBService: Components: IP: IGMP

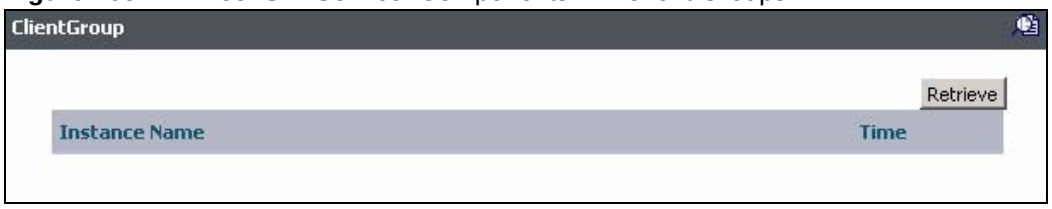
PARAMETER NAME	VALUE
Enable	This displays whether IGMP is enabled or disabled.
Status	This displays the status of IGMP support.
MaximumNumberOfConcurrentGroups	This displays the maximum number of group memberships allowed simultaneously.
MaximumNumberOfTrackedGroups	This displays the maximum number of groups for which statistics will be tracked.
LoggingEnable	This displays whether IGMP traffic logging is enabled.
DSCPMark	This displays the DiffServ code point to be used for outgoing IGMP packets.
VLANIDMark	This displays the VLAN ID to be used for outgoing IGMP packets.
EthernetPriorityMark	This displays Ethernet priority code to be used for outgoing IGMP packets.
ClientVersion	This displays the highest IGMP version supported by the IGMP Client.
ClientRobustness	This displays how vulnerable the network is to lost packets.
ClientUnsolicitedReportInterval	This displays the number of seconds between repetitions of a host's initial report of membership in a group.
ClientGroupNumberOfEntries	This displays the number of entries in the ClientGroup table.
ClientGroupStatsNumberOfEntries	This displays the number of entries in the ClientGroupStats table.

23.3.16 Front End Client Groups

You can view front end client groups in the **ClientGroup** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **IP** > **IGMP** > **ClientGroup** to display the screen.

Figure 405 TR-135: STBService: Components: IP: Client Groups



23.3.17 Front End Client Groups Settings

You can view a front end client group entry in the detailed **ClientGroup** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **IP** > **IGMP** > **ClientGroup** and click a number to display the screen.

Figure 406 TR-135: STBService: Components: IP: Client Group Entry

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 237 TR-135: STBService: Components: IP: Client Group Entry

PARAMETER NAME	VALUE
GroupAddress	This displays the IP multicast group address for which this entry contains information.
UpTime	This displays the elapsed time since the multicast group has been a member on this interface.

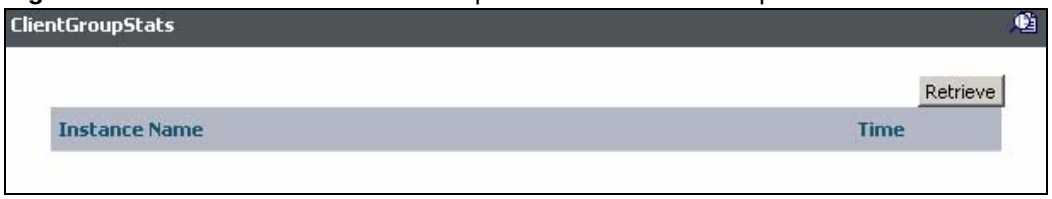
23.3.18 Front End Client Group Statistics

You can view front end client group statistics instances in the **ClientGroupStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.

3 Click **FrontEnd**.
4 Click **IP** > **IGMP** > **ClientGroupStatistics** to display the screen.

Figure 407 TR-135: STBService: Components: IP: Client Group Statistics

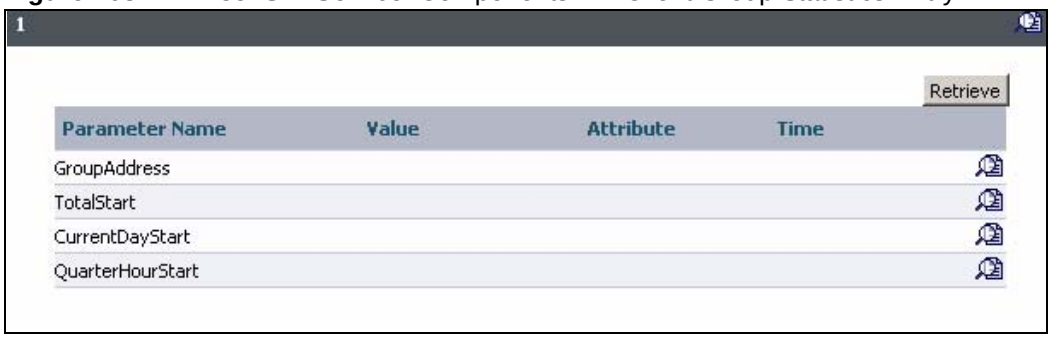


23.3.19 Front End Client Groups Statistics Details

You can view a front end client group entry's statistics in the detailed **ClientGroupStats** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **Components**.
3 Click **FrontEnd**.
4 Click **IP** > **IGMP** > **ClientGroupStats** and click a number to display the screen.

Figure 408 TR-135: STBService: Components: IP: Client Group Statistics Entry



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 238 TR-135: STBService: Components: IP: Client Group Statistics Entry

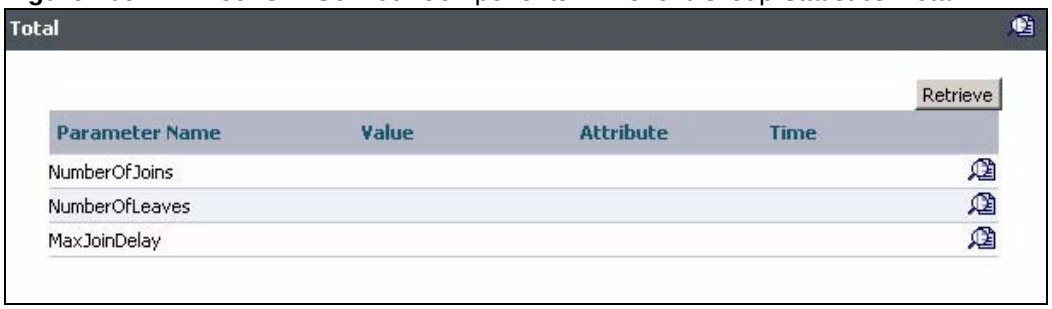
PARAMETER NAME	VALUE
GroupAddress	This displays the IP multicast group address for which this entry contains information.
TotalStart	This displays the number of seconds elapsed since the beginning of the period used for collection of "Total" statistics.
CurrentDayStart	This displays the number of seconds since the beginning of the period used for collection of "CurrentDay" statistics.
QuarterHourStart	This displays the number of seconds since the beginning of the period used for collection of "QuarterHour" statistics.

23.3.20 Front End Client Groups Total Statistics

You can view a front end client group entry's joining, leaving and join delay statistics in the **Total** client group statistics screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **IP** > **IGMP** > **ClientGroupStats**, click a number, and click **Total** to display the screen.

Figure 409 TR-135: STBService: Components: IP: Client Group Statistics: Total



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 239 TR-135: STBService: Components: IP: Client Group Statistics: Total

PARAMETER NAME	VALUE
NumberOfJoins	This displays the number of IGMP joins.
NumberOfLeaves	This displays the number of IGMP leaves.
MaxJoinDelay	This displays the delay between the sending of a Join message for this group to the arrival of the first IP packet.

23.3.21 Front End Client Groups Current Day Statistics

You can view a front end client group statistics for the current day in the **CurrentDay** client group statistics screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **IP** > **IGMP** > **ClientGroupStats**, click a number, and click **CurrentDay** to display the screen.

Figure 410 TR-135: STBService: Components: IP: Client Group Statistics: CurrentDay

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 240 TR-135: STBService: Components: IP: Client Group Statistics: CurrentDay

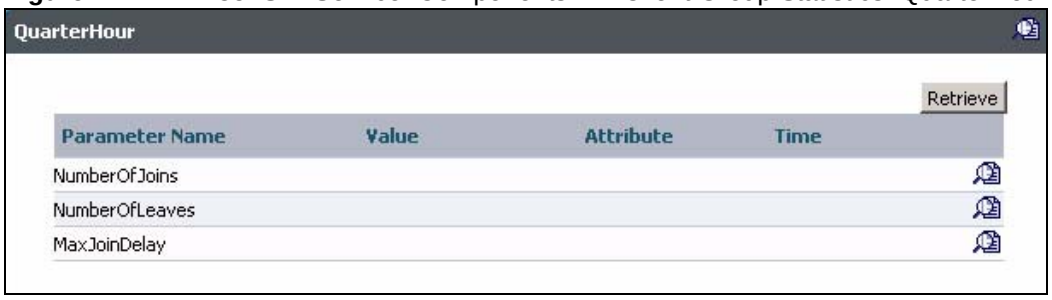
PARAMETER NAME	VALUE
NumberOfJoins	This displays the number of IGMP joins during this period.
NumberOfLeaves	This displays the number of IGMP leaves during this period.
MaxJoinDelay	This displays the delay between the sending of a Join message for this group to the arrival of the first IP packet, during this period.

23.3.22 Front End Client Groups Quarter Hour Statistics

You can view a front end client group statistics for the current quarter-hour in the **QuarterHour** client group statistics screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.
4. Click **IP** > **IGMP** > **ClientGroupStats**, click a number, and click **QuarterHour** to display the screen.

Figure 411 TR-135: STBService: Components: IP: Client Group Statistics: QuarterHour



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 241 TR-135: STBService: Components: IP: Client Group Statistics: QuarterHour

PARAMETER NAME	VALUE
NumberOfJoins	This displays the number of IGMP joins during this period.
NumberOfLeaves	This displays the number of IGMP leaves during this period.
MaxJoinDelay	This displays the delay between the sending of a Join message for this group to the arrival of the first IP packet, during this period.

23.3.23 Front End Dejittering

You can view dejittering buffer configuration information in the **Dejittering** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.

4 Click **IP** > **Dejittering**.

Figure 412 TR-135: STBService: Components: IP: Dejittering

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 242 TR-135: STBService: Components: IP: Dejittering

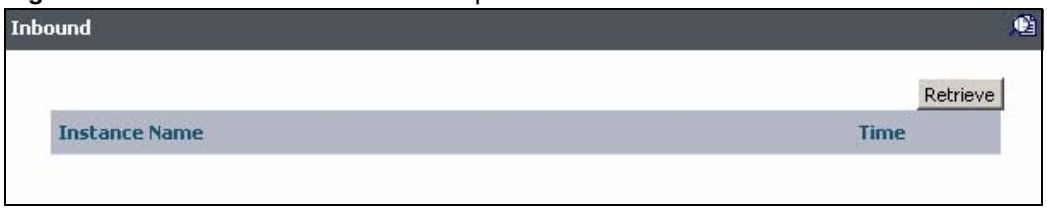
PARAMETER NAME	VALUE
BufferSize	This displays the dejittering buffer size, measured in milliseconds, on the receiver side of the CPE.
BufferInitialLevel	This displays the number of milliseconds of data that should be in the receiver side dejittering buffer before play starts.

23.3.24 Front End Inbound Information

You can view the number of inbound instances in the **Inbound** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **Components**.
3 Click **FrontEnd**.
4 Click **IP** > **Inbound** to display the screen.

Figure 413 TR-135: STBService: Components: IP: Inbound

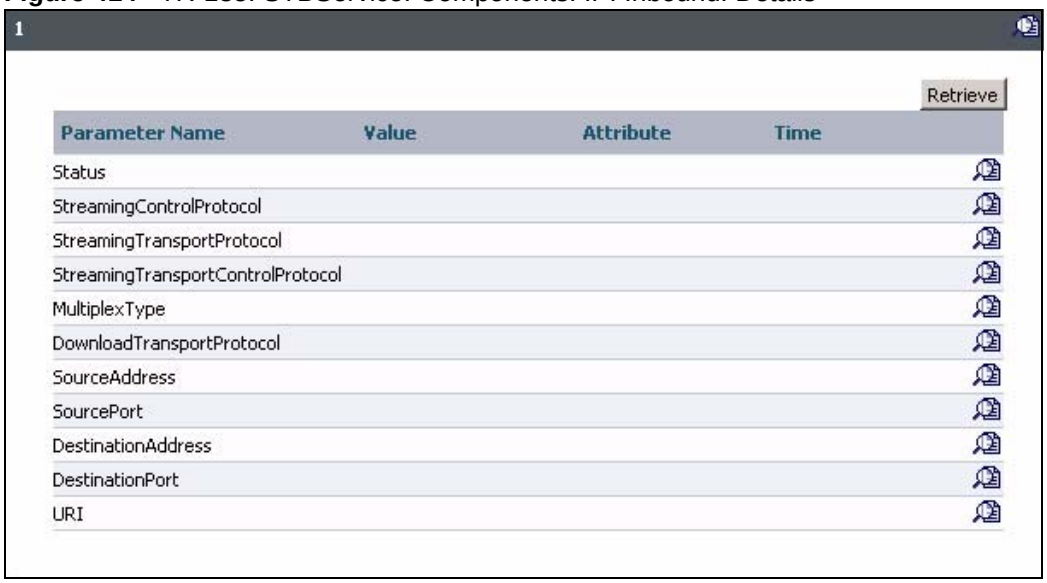


23.3.25 Front End Inbound Information Statistics

You can view information about the IP streams entering the STB through this front end in the detailed **Inbound** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **Components**.
3 Click **FrontEnd**.
4 Click **IP** > **Inbound** and click a number to display the screen.

Figure 414 TR-135: STBService: Components: IP: Inbound: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 243 TR-135: STBService: Components: IP: Inbound Details

PARAMETER NAME	VALUE
Status	This displays the status of this inbound stream.
StreamingControlProtocol	This displays the network protocol used for controlling streaming of the source content.
StreamingTransportProtocol	This displays the network protocol currently used for streaming the source content.
StreamingTransportControlProtocol	This displays the transport control protocol currently used for streaming the source content.
MultiplexType	This displays the AV multiplex type currently used for the source content.
DownloadTransportProtocol	This displays network protocol currently used for downloading the source content.
SourceAddress	This displays the IP address of the source of the current stream content.
SourcePort	This displays the TCP or UDP port number of the source of the current stream content.
DestinationAddress	This displays the IP address of the destination of the current stream content.
DestinationPort	This displays the TCP or UDP port number of the destination of the current stream content.
URI	This displays the URI that indicates the current source of the stream content.

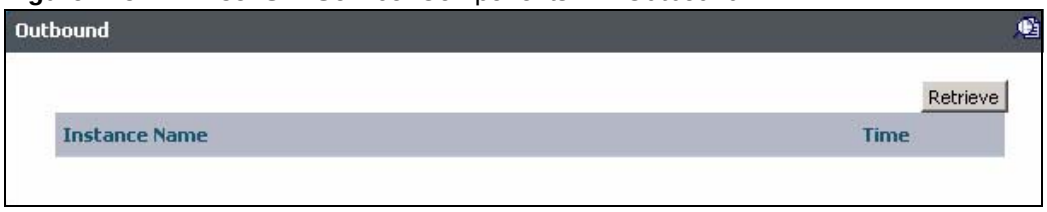
23.3.26 Front End Outbound Information

You can view the number of outbound instances in the **Outbound** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **FrontEnd**.

4 Click **IP** > **Outbound** to display the screen.

Figure 415 TR-135: STBService: Components: IP: Outbound

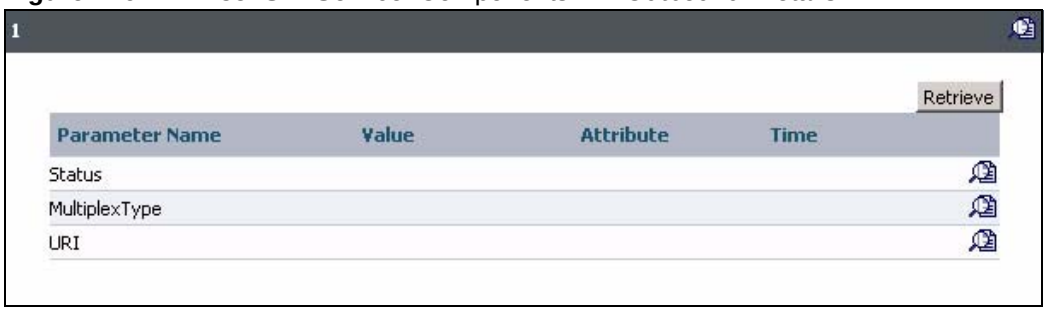


23.3.27 Front End Outbound Information Statistics

You can view information about outbound streams in the detailed **Outbound** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **Components**.
3 Click **FrontEnd**.
4 Click **IP** > **Outbound** and click a number to display the screen.

Figure 416 TR-135: STBService: Components: IP: Outbound: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 244 TR-135: STBService: Components: IP: Outbound Details

PARAMETER NAME	VALUE
Status	This displays the status of this outbound stream.
MultiplexType	This displays the AV multiplex type currently used for the source content.
URI	This displays the URI that indicates the current source of the stream content.

23.3.28 Front End Service Connections

You can view information about the parameters used to force connection to a dedicated IP stream for testing purposes in the **ServiceConnect** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **Components**.
3 Click **FrontEnd**.
4 Click **IP** > **ServiceConnect** and click a number to display the screen.

Figure 417 TR-135: STBService: Components: IP: ServiceConnect

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 245 TR-135: STBService: Components: IP: ServiceConnect

PARAMETER NAME	VALUE
URI	This displays the service to connect to.

23.3.29 Personal Video Recorder Settings

You can view information about personal video recorder (PVR) settings in the **PVR** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **PVR**.

Figure 418 TR-135: STBService: Components: PVR

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 246 TR-135: STBService: Components: PVR

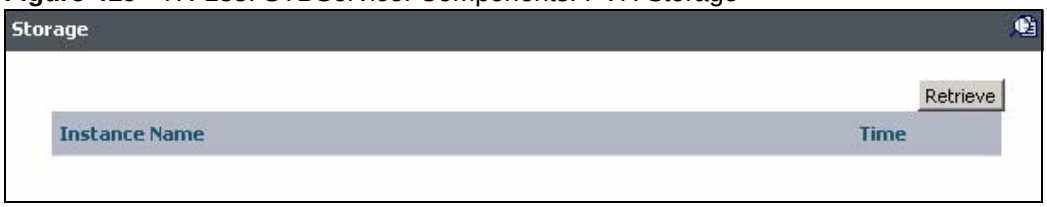
PARAMETER NAME	VALUE
StorageNumberOfEntries	This displays the number of storage entries.

23.3.30 Personal Video Recorder Storage

You can view information about personal video recorder (PVR) storage instances in the **Storage** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **PVR**.
4. Click **Storage**.

Figure 419 TR-135: STBService: Components: PVR Storage

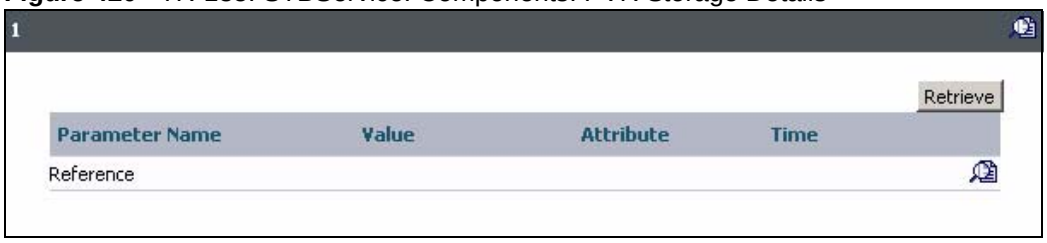


23.3.31 Personal Video Recorder Storage Details

You can view information about each PVR storage instance in the detailed **Storage** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **PVR**.
4. Click **Storage** and click a number to display the screen.

Figure 420 TR-135: STBService: Components: PVR Storage Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 247 TR-135: STBService: Components: PVR

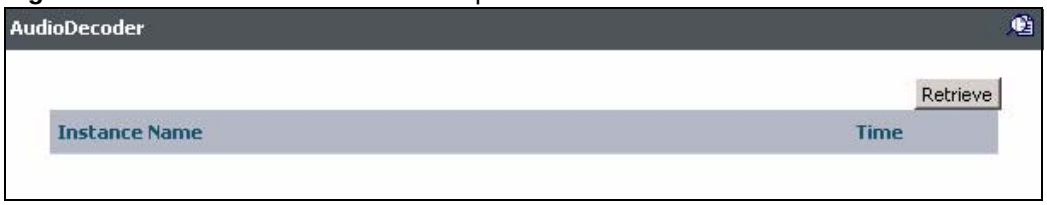
PARAMETER NAME	VALUE
Reference	This displays the corresponding storage service instance, or an object contained within the storage service instance.

23.3.32 Audio Decoder Status

You can view information about audio decoder instances in the **AudioDecoder** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components.**
3. Click **AudioDecoder**.

Figure 421 TR-135: STBService: Components: AudioDecoder

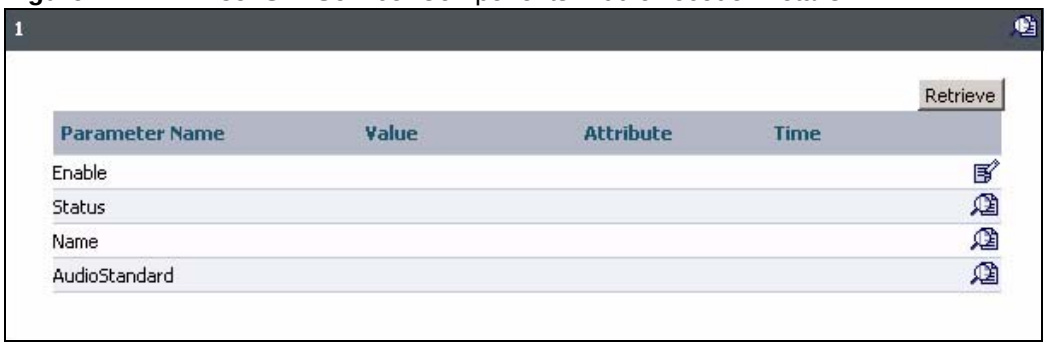


23.3.33 Audio Decoder Details

You can view information about each audio decoder instance in the detailed **AudioDecoder** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click a number and **AudioDecoder**.
4. Click a number to display the screen.

Figure 422 TR-135: STBService: Components: AudioDecoder Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 248 TR-135: STBService: Components: AudoDecoder Details

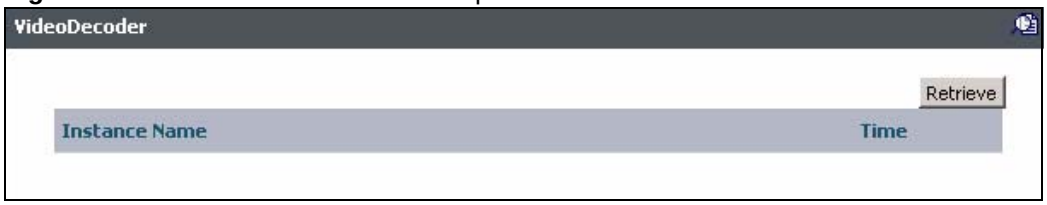
PARAMETER NAME	VALUE
Enable	This displays whether or not the audio decoder instance is enabled.
Status	This displays the status of this audio decoder.
Name	This displays the name associated with this video decoder.
AudioStandard	This displays the audio standard currently being processed by this audio decoder.

23.3.34 Video Decoder Status

You can view information about video decoder instances in the **VideoDecoder** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **VideoDecoder**.

Figure 423 TR-135: STBService: Components: VideoDecoder

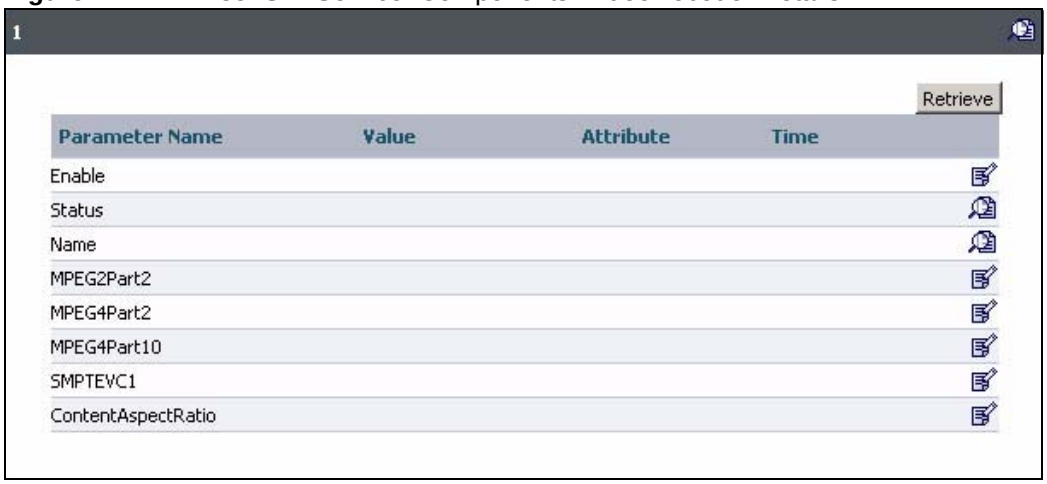


23.3.35 Video Decoder Details

You can view information about each video decoder instance in the detailed **VideoDecoder** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click a number and **VideoDecoder**.
4. Click a number to display the screen.

Figure 424 TR-135: STBService: Components: VideoDecoder Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 249 TR-135: STBService: Components: VideoDecoder Details

PARAMETER NAME	VALUE
Enable	This displays whether or not the video decoder instance is enabled.
Status	This displays the status of this video decoder.
Name	This displays the name associated with this video decoder.
MPEG2Part2	This displays the path name of the MPEG2 Part 2 profile and level object instance.
MPEG4Part2	This displays the path name of the MPEG4 Part 2 profile and level object instance.
MPEG4Part10	This displays the path name of the MPEG4 Part 10 profile and level object instance.
SMPTEVC1	This displays the path name of the SMPTE VC-1 profile and level object instance.
ContentAspectRatio	This displays the native aspect ratio of the content for this decoder.

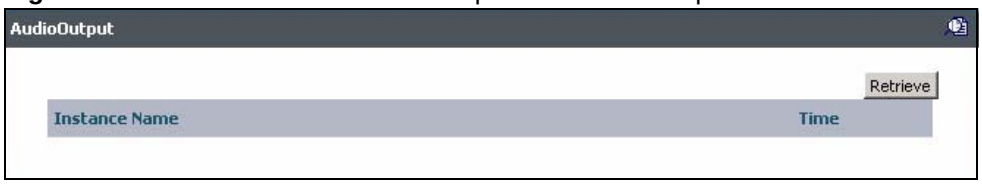
23.3.36 Audio Output Status

You can view information about audio output instances in the **AudioOutput** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.

2 Click a number and **Components**.
3 Click **AudioOutput**.

Figure 425 TR-135: STBService: Components: AudioOutput

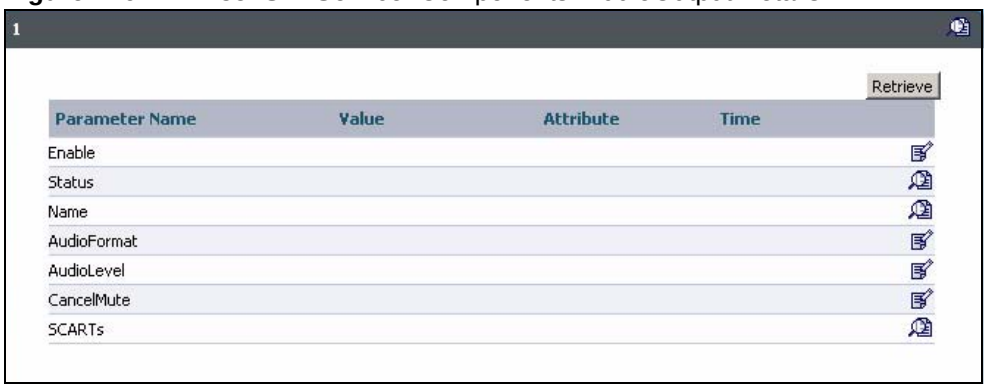


23.3.37 Audio Output Details

You can view information about each audio output instance in the detailed **AudioOutput** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **Components**.
3 Click a number and **AudioOutput**.
4 Click a number to display the screen.

Figure 426 TR-135: STBService: Components: AudioOutput Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 250 TR-135: STBService: Components: AudioOutput Details

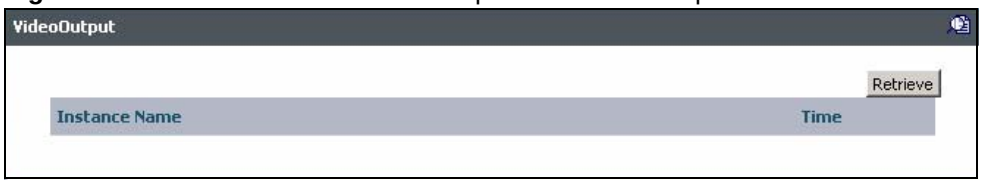
PARAMETER NAME	VALUE
Enable	This displays whether or not the audio output instance is enabled.
Status	This displays the status of this audio output instance (enabled, disabled or muted).
Name	This displays the name associated with this audio output instance.
AudioFormat	This displays the currently active audio output format, if there is one.
AudioLevel	This displays the audio output level as a percentage (0 is the quietest, and 100 is the loudest).
CancelMute	This displays whether this audio output's mute status is cancelled. When read, this value is always false.
SCARTS	This displays the path names of the SCART object instances associated with this audio output, if any.

23.3.38 Video Output Status

You can view information about video output instances in the **VideoOutput** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **VideoOutput**.

Figure 427 TR-135: STBService: Components: VideoOutput

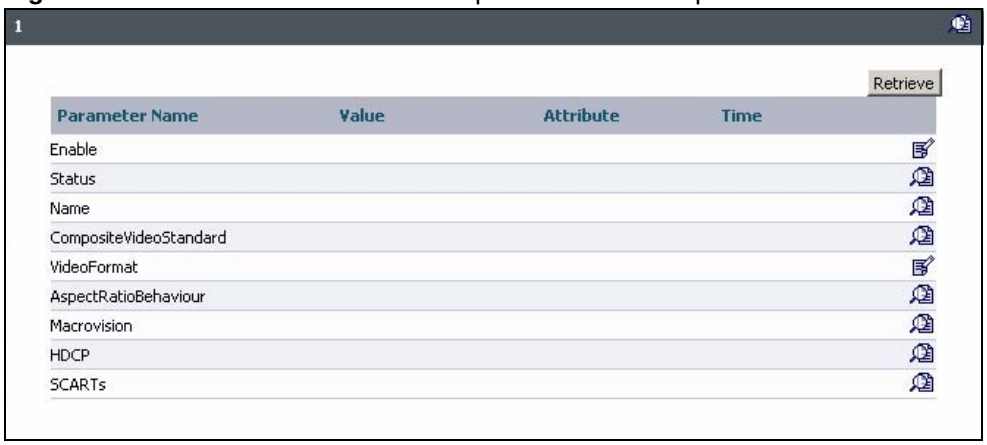


23.3.39 Video Output Details

You can view information about each video output instance in the detailed **VideoOutput** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components.**
3. Click a number and **VideoOutput**.
4. Click a number to display the screen.

Figure 428 TR-135: STBService: Components: VideoOutput Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 251 TR-135: STBService: Components: VideoOutput Details

PARAMETER NAME	VALUE
Enable	This displays whether or not the video output instance is enabled.
Status	This displays the status of this video output instance (enabled, disabled or muted).
Name	This displays the name associated with this video output instance.

Table 251 TR-135: STBService: Components: VideoOutput Details

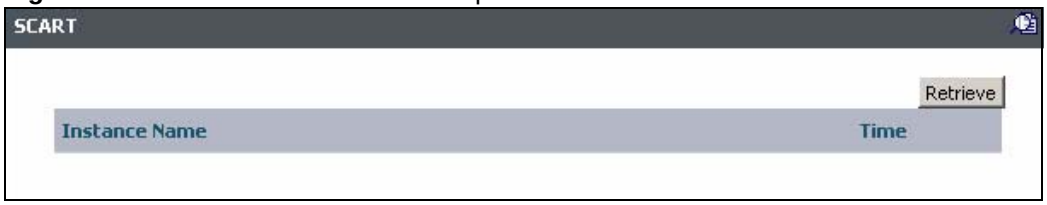
PARAMETER NAME	VALUE
CompositeVideoStandard	This displays the type of analog video standard currently in use, if any.
VideoFormat	This displays the currently active video output format, if any.
AspectRatioBehaviour	This displays the aspect ratio behaviour for monitors with an aspect ratio different from the content.
Macrovision	This displays whether Macrovision protection is being used on the video.
HDCP	This displays whether HDCP protection is being used on the video.
SCARTs	This displays the path names of the SCART object instances associated with this video output, if any.

23.3.40 SCART Status

You can view information about SCART (Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs) instances in the **SCART** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **SCART**.

Figure 429 TR-135: STBService: Components: SCART

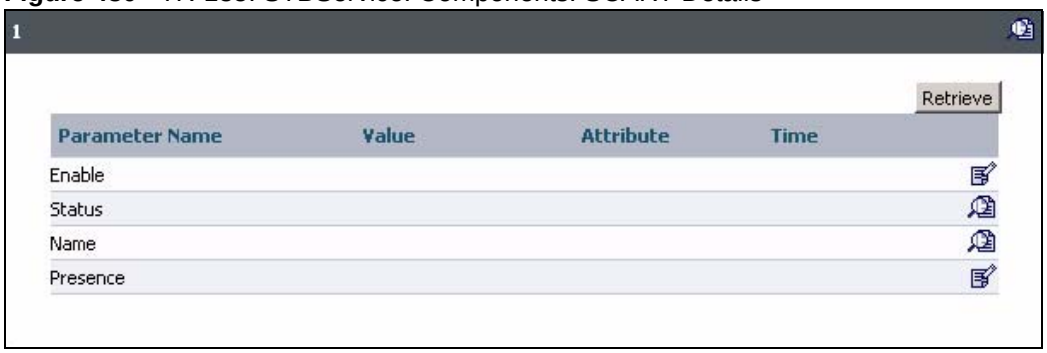


23.3.41 SCART Details

You can view information about each video decoder instance in the detailed **SCART** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click a number and **SCART**.
4. Click a number to display the screen.

Figure 430 TR-135: STBService: Components: SCART Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 252 TR-135: STBService: Components: SCART Details

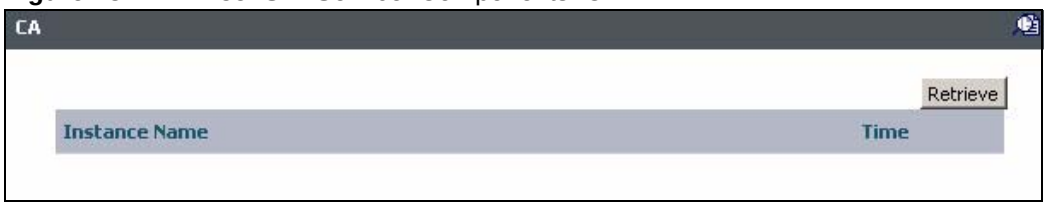
PARAMETER NAME	VALUE
Enable	This displays whether or not the SCART instance is enabled.
Status	This displays the status of this SCART instance.
Name	This displays the name associated with this SCART instance.
Presence	This displays whether or not the presence control signal (pin 8 of the SCART connector) is enabled.

23.3.42 Conditional Access Status

You can view information about conditional access instances in the **CA** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components.**
3. Click **CA**.

Figure 431 TR-135: STBService: Components: CA

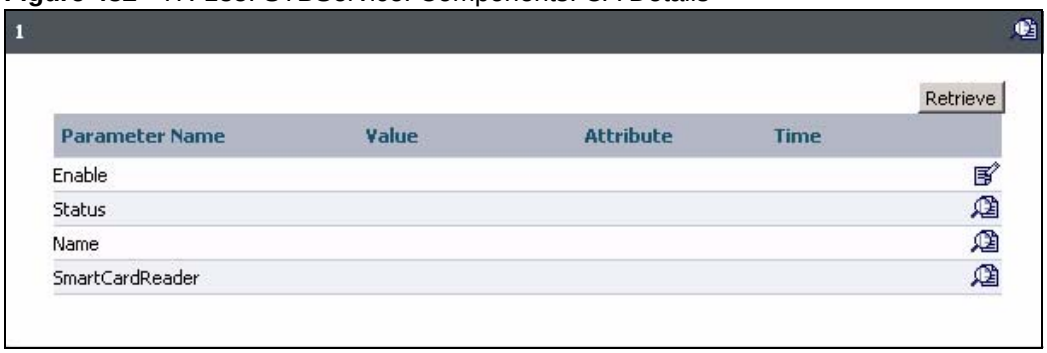


23.3.43 Conditional Access Details

You can view information about each conditional access instance in the detailed **CA** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click a number and **CA**.
4. Click a number to display the screen.

Figure 432 TR-135: STBService: Components: CA Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 253 TR-135: STBService: Components: CA Details

PARAMETER NAME	VALUE
Enable	This displays whether or not the conditional access instance is enabled.
Status	This displays the status of this conditional access instance.
Name	This displays the name associated with this conditional access instance.
SmartCardReader	This displays the path of the smart card reader instance (if any) containing the smart card associated with this CA instance.

23.3.44 DRM Status

You can view information about digital rights management (DRM) instances in the **DRM** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click **DRM**.

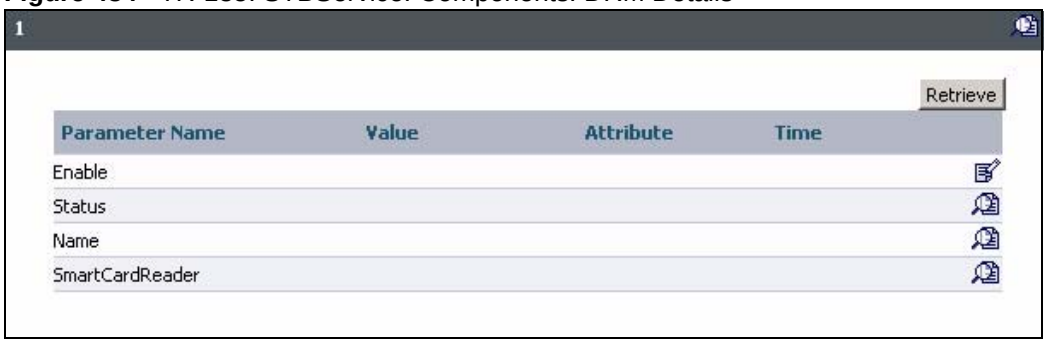
Figure 433 TR-135: STBService: Components: DRM

23.3.45 DRM Details

You can view information about each conditional access instance in the detailed **CA** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **Components**.
3. Click a number and **DRM**.
4. Click a number to display the screen.

Figure 434 TR-135: STBService: Components: DRM Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 254 TR-135: STBService: Components: DRM Details

PARAMETER NAME	VALUE
Enable	This displays whether or not the DRM instance is enabled.
Status	This displays the status of this DRM instance.
Name	This displays the name associated with this DRM instance.
SmartCardReader	This displays the path of the smart card reader instance (if any) containing the smart card associated with this DRM instance.

23.4 AV Streams

You can view information about a device's AV (audiovisual) stream instances in the **AVStreams** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **AVStreams**.

Figure 435 TR-135: STBService: AVStreams

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 255 TR-135: STBService: AVStreams

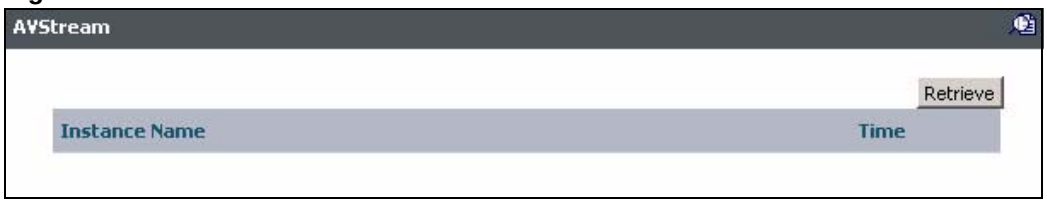
PARAMETER NAME	VALUE
ActiveAVStreams	This displays the number of currently-active AV streams.
AVStreamNumberOfEntries	This displays the number of AVStream instances.

23.4.1 AV Stream Setup

You can view information about AV (audiovisual) stream instances in the **AVStream** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **AVStreams**.
3. Click **AVStream**.

Figure 436 TR-135: STBService: AVStreams: AVStream

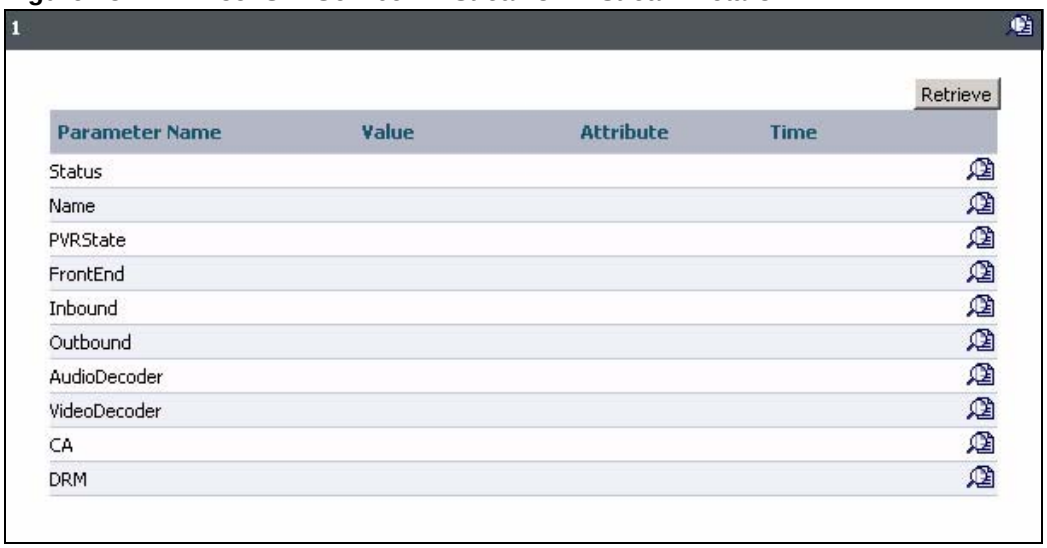


23.4.2 AV Stream Details

You can view information about each AV (audiovisual) stream instance in the detailed **AVStream** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **AVStreams.**
3. Click **AVStream**, then click a number to display the screen.

Figure 437 TR-135: STBService: AVStreams: AVStream Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 256 TR-135: STBService: AVStreams

PARAMETER NAME	VALUE
Status	This displays the status of this AV stream.
Name	This displays the name associated with this AV stream.

Table 256 TR-135: STBService: AVStreams

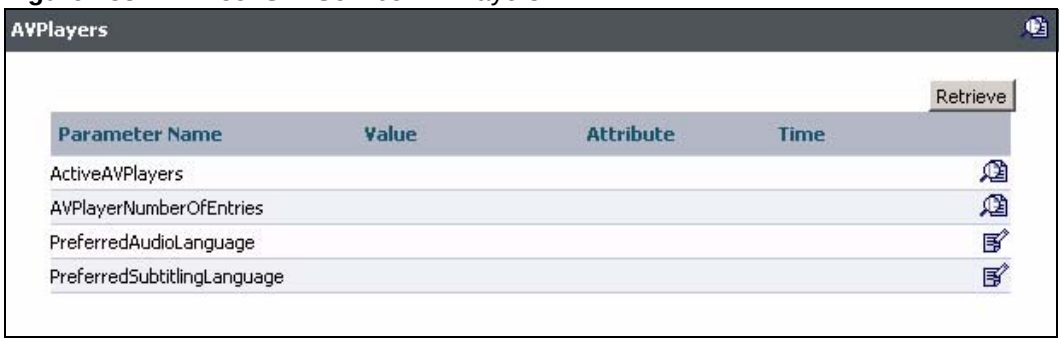
PARAMETER NAME	VALUE
PVTState	This displays whether this stream is using the PVR (Personal Video Recorder) and, if so, the PVR state.
FrontEnd	This displays the path name of the input FrontEnd instance associated with this AV stream.
Inbound	This displays the path of the inbound IP stream instance associated with the FrontEnd for this AV stream.
Outbound	This displays the path of the outbound IP stream instance associated with the output FrontEnd for this AV stream (this is always the IP FrontEnd).
AudioDecoder	This displays the path of the Audio Decoder instance associated with this AV stream.
VideoDecoder	This displays the path of the Video Decoder instance associated with this AV stream.
CA	This displays the path of the CA instance associated with this AV stream.
DRM	This displays the path of the DRM instance associated with this AV stream.

23.5 AV Players

You can view information about the AV (audiovisual) players on a device in the **AVPlayers** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **AVPlayers**.

Figure 438 TR-135: STBService: AVPlayers



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 257 TR-135: STBService: AVPlayers

PARAMETER NAME	VALUE
ActiveAVPlayers	This displays the number of currently-active AV players.
AVPlayerNumberOfEntries	This displays the number of AVPlayer instances.

Table 257 TR-135: STBService: AVPlayers

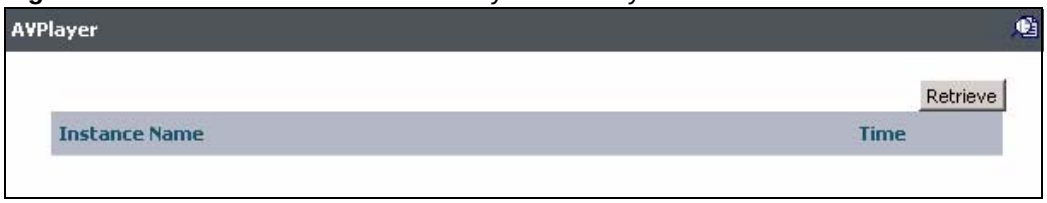
PARAMETER NAME	VALUE
PreferredAudioLanguage	This displays the language that should be used by the STB when receiving a multilingual audio stream.
PreferredSubtitlingLanguage	This displays the language that should be used by the STB when receiving a multilingual subtitling stream.

23.5.1 AV Player Setup

You can view information about AV player instances in the **AVPlayer** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **AVPlayers**.
3. Click **AVPlayer**.

Figure 439 TR-135: STBService: AVPlayers: AVPlayer

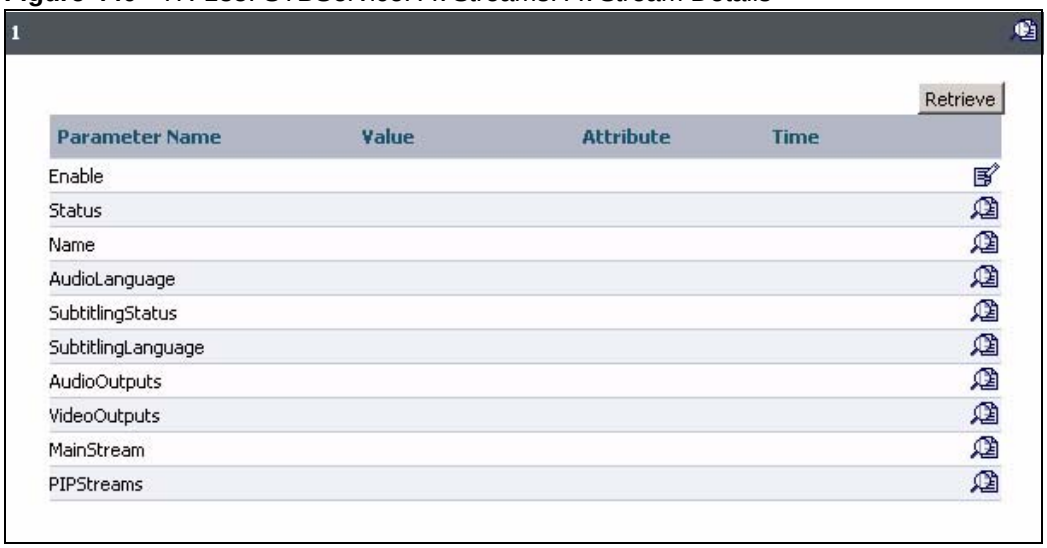


23.5.2 AV Player Details

You can view information about each AV (audiovisual) player instance in the detailed **AVStream** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **AVPlayers**.
3. Click **AVPlayer**, then click a number to display the screen.

Figure 440 TR-135: STBService: AVStreams: AVStream Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 258 TR-135: STBService: AVStreams

PARAMETER NAME	VALUE
Enable	This displays whether this AV player is currently active or inactive.
Status	This displays the status of this AV player.
Name	This displays the name associated with this AV player.
AudioLanguage	This displays the language that currently being used by the STB for audio stream processing.
SubtitlingStatus	This displays whether subtitling is enabled or disabled.
SubtitlingLanguage	This displays the language that currently being used by the STB for subtitling.
AudioOutputs	This displays the path names of the audio output instances associated with this AV player.
VideoOutputs	This displays the path names of the video output instances associated with this AV player.
MainStream	This displays the path name of the AV stream instance associated with this AV player that is being sent to the main screen.
PIPStreams	This displays the path name of the AV stream instance associated with this AV player that is being sent to picture-in-picture (PIP).

23.6 Service Monitoring

You can view information about the QoS (Quality of Service) and QoE (Quality of Experience) statistics on a device in the **ServiceMonitoring** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.

Figure 441 TR-135: STBService: ServiceMonitoring

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 259 TR-135: STBService: ServiceMonitoring

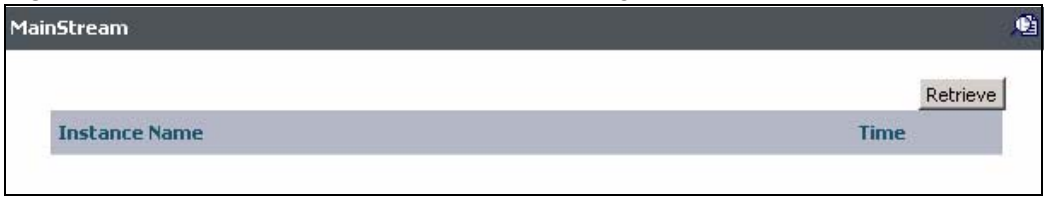
PARAMETER NAME	VALUE
SampleEnable	This displays whether sample statistics collection is enabled or disabled.
SampleState	This displays whether sample statistics are available.
SampleInterval	This displays the sample interval in seconds. Statistics are measured over this sample interval.
ReportSamples	This displays the number of samples that the STB can store and report for each statistic.
FetchSamples	This displays whether reporting of samples is enabled.
TimeReference	This displays a time reference in UTC (Coordinated Universal Time), to determine when sample intervals will complete.
ForceSample	This displays whether sample forcing is enabled. When enabled, this forces statistics for the current sample to be calculated and updated.
ReportStartTime	This displays the time at which the sample interval for the first stored sample for each statistic started.
ReportEndTime	This displays the time at which the sample interval for the first stored sample for each statistic ended.
MainStreamNumberOfEntries	This displays the number of MainStream instances.

23.6.1 Main Stream Setup

You can view information about Main Stream instances in the **MainsStream** screen. Each instance is associated with a specified service type.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**.

Figure 442 TR-135: STBService: ServiceMonitoring: MainStream

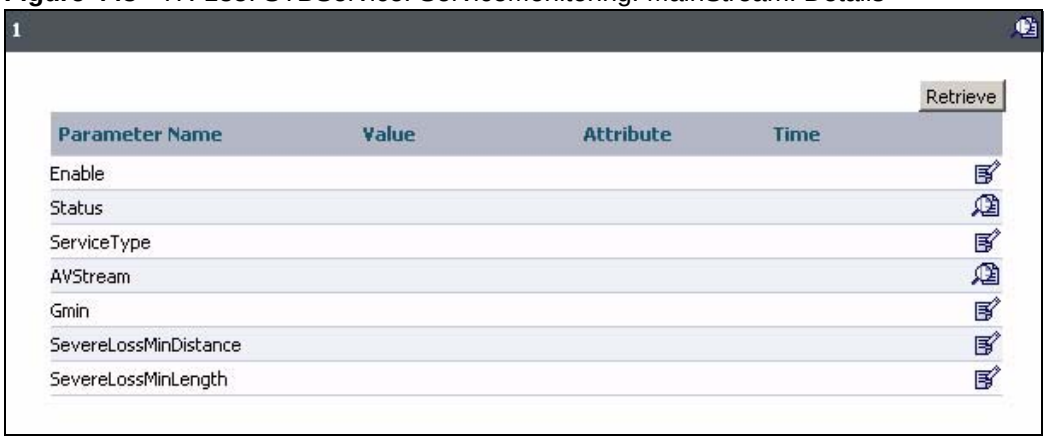


23.6.2 Main Stream Details

You can view information about each Main Stream instance in the detailed **MainStream** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.

Figure 443 TR-135: STBService: ServiceMonitoring: MainStream: Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 260 TR-135: STBService: ServiceMonitoring: MainStream: Details

PARAMETER NAME	VALUE
Enable	This displays whether the collection of Total and Sample statistics for this instance is enabled.
Status	This displays the status of Total and Sample statistics.
ServiceType	This displays the service type associated with this main stream instance.
AVStream	This displays the path name of the Main AV stream instance currently associated with this main stream instance.
Gmin	This displays the minimum number of consecutive received packets after the end of an RTP Loss Event.
SevereLossMinDistance	This displays the minimum time between error events before an RTP Loss event is considered severe.
SevereLossMinLength	This displays the minimum number of error events before an RTP Loss event is considered severe.

23.6.3 Main Stream Total Statistics

You can view information about each Main Stream instance's total statistics in the **Total** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Total**.

Figure 444 TR-135: STBService: ServiceMonitoring: MainStream Total Statistics

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 261 TR-135: STBService: ServiceMonitoring: MainStream Total Statistics

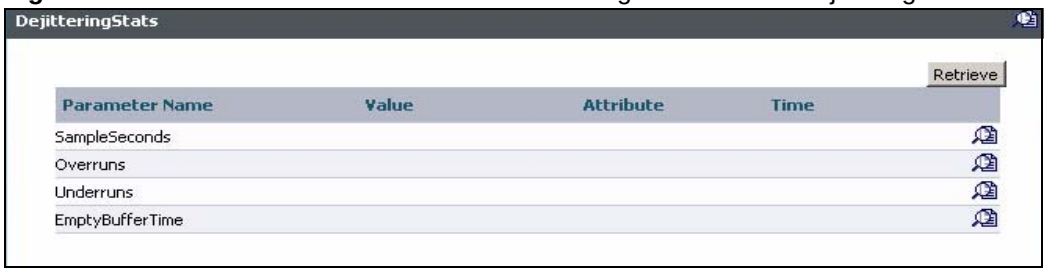
PARAMETER NAME	VALUE
Reset	This displays whether resetting Total statistics is enabled for this instance. When this value it is read, it is always false.
ResetTime	This displays the number of seconds since the Total statistics were last enabled or reset for this main stream instance.

23.6.4 Main Stream Dejittering Statistics

You can view information about each Main Stream instance's dejittering statistics in the **DejitteringStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Total**, then click **DejitteringStats**.

Figure 445 TR-135: STBService: ServiceMonitoring: MainStream Dejittering Statistics



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 262 TR-135: STBService: ServiceMonitoring: MainStream Dejittering Statistics

PARAMETER NAME	VALUE
Overruns	This displays the number of times the receive jitter buffer has overrun for this AV stream.
Underruns	This displays the number of times the receive jitter buffer has underrun for this AV stream.

23.6.5 Main Stream RTP Statistics

You can view information about each Main Stream instance's RTP statistics in the **RTPStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Total**, then click **RTPStats**.

Figure 446 TR-135: STBService: ServiceMonitoring: MainStream RTP Statistics

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 263 TR-135: STBService: ServiceMonitoring: MainStream RTP Statistics

PARAMETER NAME	VALUE
PacketsExpected	This displays the total number of RTP packets expected for this AV stream.
PacketsDiscarded	This displays the number of packets discarded at the RTP player for this AV stream.
PacketsOutOfSequence	This displays the number of packets out of sequence at the RTP level for this AV stream.
PacketsReceived	This displays the number of RTP packets received for this AV stream after EC (error correction).
PacketsReceivedBeforeEC	This displays the number of RTP packets received for this AV stream before error correction.
PacketsLost	This displays the number of RTP packets lost for this stream.
PacketsLostBeforeEC	This displays the number of RTP packets lost for this stream before error correction.
LossEvents	This displays the number of Loss Events for this stream.

Table 263 TR-135: STBService: ServiceMonitoring: MainStream RTP Statistics

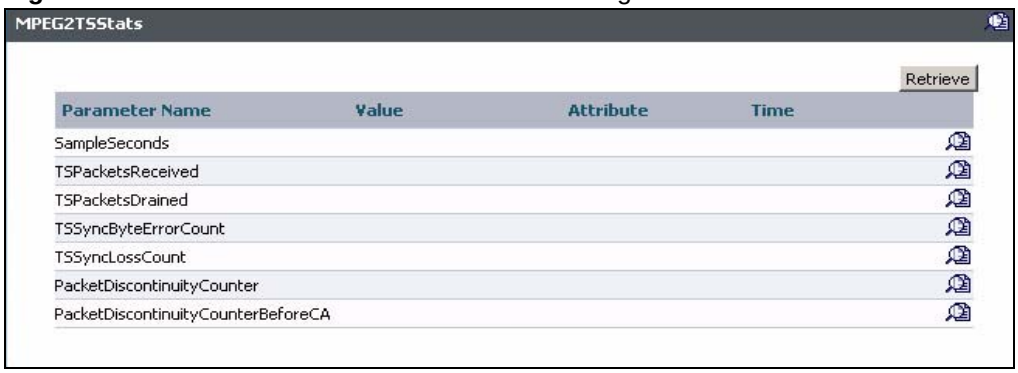
PARAMETER NAME	VALUE
LossEventsBeforeEC	This displays the number of Loss Events for this stream, before error correction.
SevereLossIndexCount	This displays the number of Loss Events closer than the SevereLossMinDistance value.
SevereLossIndexCountBeforeEC	This displays the number of Loss Events closer than the SevereLossMinDistance value, before error correction.
SevereLossLengthCount	This displays the number of Loss Events longer than the SevereLossMinLength value.
SevereLossLengthCountBeforeEC	This displays the number of Loss Events longer than the SevereLossMinLength value, before error correction.
RetransmitTimeouts	This displays the number of retransmission timeouts.

23.6.6 Main Stream MPEG2-TS Statistics

You can view information about each Main Stream instance's MPEG2-TS statistics in the **MPEG2TSStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Total**, then click **MPEG2TSStats**.

Figure 447 TR-135: STBService: ServiceMonitoring: MainStream MPEG2TSStats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 264 TR-135: STBService: ServiceMonitoring: MainStream MPEG2TSStats

PARAMETER NAME	VALUE
TSPacketsReceived	This displays the number of MPEG2-TS packets received for this AV stream.
TSSyncByteErrorCount	This displays the number of MPEG2-TS packets with an invalid transport sync byte received for this AV stream.
TSSyncLossCount	This displays the number of MPEG2-TS loss of synchronization events for this AV stream.

Table 264 TR-135: STBService: ServiceMonitoring: MainStream MPEG2TSStats

PARAMETER NAME	VALUE
PacketDiscontinuityCounter	This displays the number of MPEG2-TS discontinuity errors that have been captured for this AV stream
PacketDiscontinuityCounterBeforeCA	This displays the number of MPEG2-TS discontinuity errors that have been captured for this AV stream, before CA encryption (if applied).

23.6.7 Main Stream Video Decoder Statistics

You can view information about each Main Stream instance's video decoder statistics in the **VideoDecoderStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Total**, then click **VideoDecoderStats**.

Figure 448 TR-135: STBService: ServiceMonitoring: MainStream VideoDecoderStats

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 265 TR-135: STBService: ServiceMonitoring: MainStream VideoDecoderStats

PARAMETER NAME	VALUE
FrameRate	This displays the frame rate at which the STB plays the video content for this AV stream.
DecodedFrames	This displays the number of video frames that were decoded completely (errorless frames) or partially (corrupted frames) for this AV stream.
LostFrames	This displays the number of video frames that could not be reproduced by the STB for this AV stream.

Table 265 TR-135: STBService: ServiceMonitoring: MainStream VideoDecoderStats

PARAMETER NAME	VALUE
ConcealedFrames	This displays the number of video frames (for this AV stream) reproduced by the STB for which information was missing and loss concealment was applied.
IDecodedFrames	This displays the number of I frames that were decoded completely or partially for this AV stream.
ILostFrames	This displays the number of I frames that could not be reproduced by the STB, for this AV stream.
IConcealedFrames	This displays the number of I frames (for this AV stream) reproduced by the STB for which information was missing and loss concealment was applied.
PDecodedFrames	This displays the number of P frames that were decoded completely or partially for this AV stream.
PLostFrames	This displays the number of P frames that could not be reproduced by the STB, for this AV stream.
PConcealedFrames	This displays the number of P frames (for this AV stream) reproduced by the STB for which information was missing and loss concealment was applied.
BDecodedFrames	This displays the number of B frames that were decoded completely or partially for this AV stream.
BLostFrames	This displays the number of B frames that could not be reproduced by the STB, for this AV stream.
BConcealedFrames	This displays the number of B frames (for this AV stream) reproduced by the STB for which information was missing and loss concealment was applied.
AVResynchCounter	This displays the number of AV resynchronizations performed by the STB, for this AV stream.

23.6.8 Main Stream Audio Decoder Statistics

You can view information about each Main Stream instance's audio decoder statistics in the **AudioDecoderStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Total**, then click **AudioDecoderStats**.

Figure 449 TR-135: STBService: ServiceMonitoring: MainStream AudioDecoderStats

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 266 TR-135: STBService: ServiceMonitoring: MainStream AudioDecoderStats

PARAMETER NAME	VALUE
DecodedFrames	This displays the number of audio frames that were decoded completely or partially for this AV stream.
DecodingErrors	This displays the number of audio decoding errors for this AV stream.

23.6.9 Main Stream Video Response Statistics

You can view information about each Main Stream instance's video decoder statistics in the **VideoResponseStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Total**, then click **VideoResponseStats**.

Figure 450 TR-135: STBService: ServiceMonitoring: MainStream VideoResponseStats

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 267 TR-135: STBService: ServiceMonitoring: MainStream VideoResponseStats

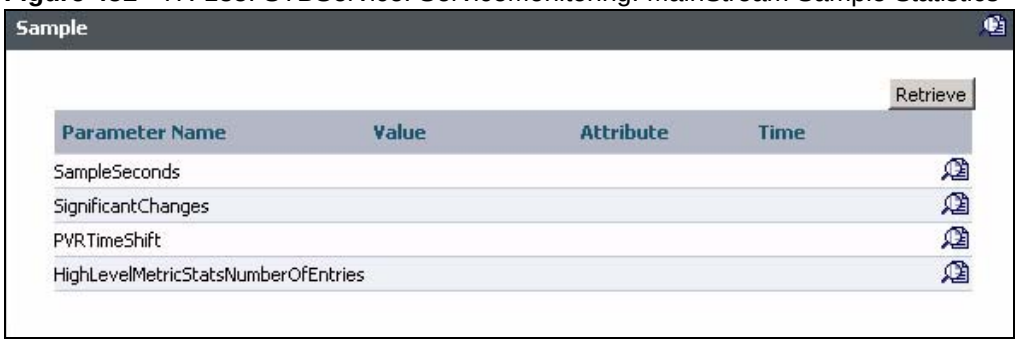
PARAMETER NAME	VALUE
MinimumVideoSystemResponse	This displays the minimum time period between the transmission of an IGMP JOIN command (or an RTSP SETUP command) and the display of the first I frame, for this AV stream.
MaximumVideoSystemResponse	This displays the maximum time period between the transmission of an IGMP JOIN command (or an RTSP SETUP command) and the display of the first I frame, for this AV stream.

23.6.10 Main Stream Sample Statistics

You can view information about each Main Stream instance's sample statistics (sample statistics collected since collection was last enabled or reset) in the **Sample** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Sample**.

Figure 451 TR-135: STBService: ServiceMonitoring: MainStream Sample Statistics



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 268 TR-135: STBService: ServiceMonitoring: MainStream Sample Statistics

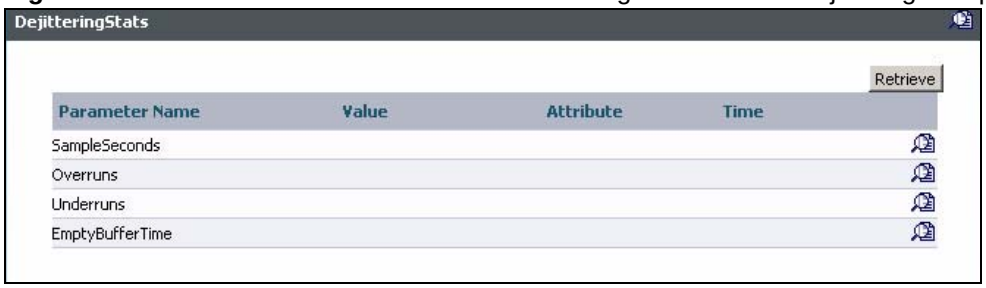
PARAMETER NAME	VALUE
SampleSeconds	This displays the number of seconds during which data was collected for this AV stream, during the sample interval.
SignificantChanges	This displays the total number of times that a potentially disruptive event occurred for this AV stream during the sample interval.
PVRTimeShift	This displays whether PVR was used at any time for this AV stream, during the sample interval.
HighLevelMetricStats NumberOfEntries	This displays the number of HighLevelMetricStats instances.

23.6.11 Main Stream Dejittering Sample Statistics

You can view information about each Main Stream instance's dejittering statistics during the sample interval in the **DejitteringStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Sample**, then click **DejitteringStats**.

Figure 452 TR-135: STBService: ServiceMonitoring: MainStream Dejittering Sample Stats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 269 TR-135: STBService: ServiceMonitoring: MainStream Dejittering Sample Stats

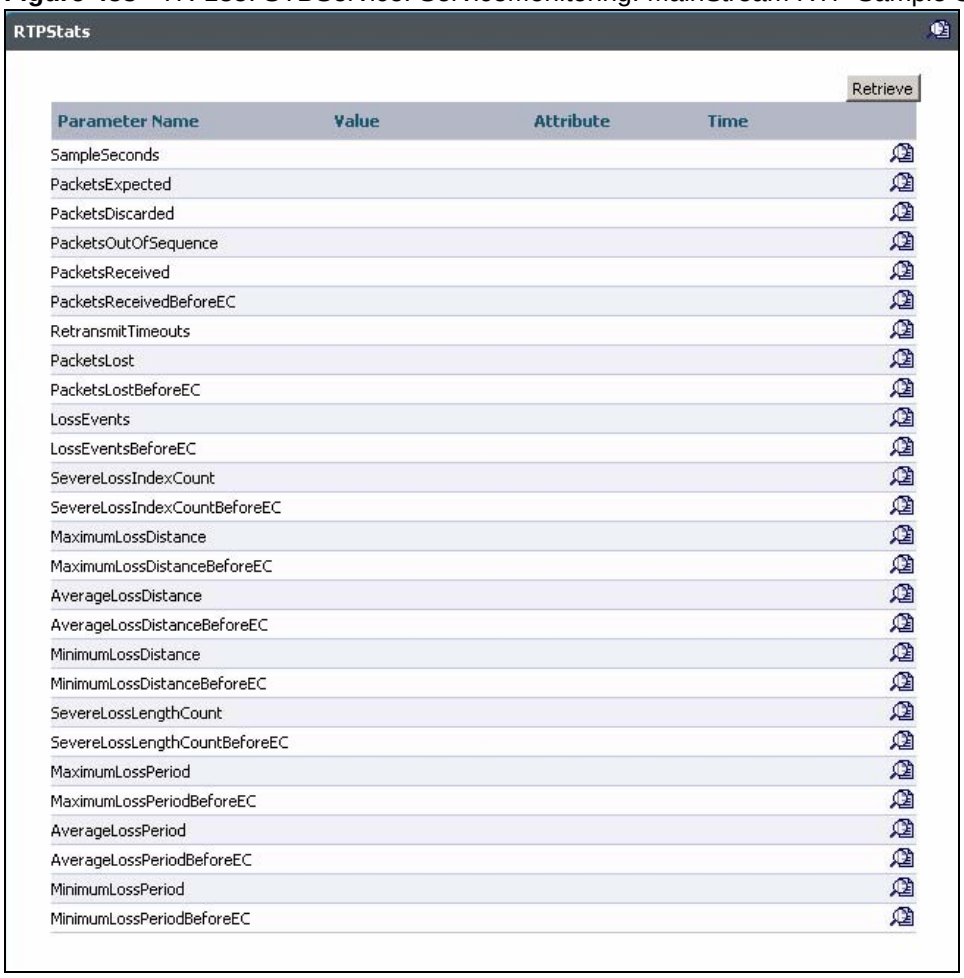
PARAMETER NAME	VALUE
SampleSeconds	This displays the number of seconds during which de-jittering data was collected for this AV stream, during the sample interval.
Overruns	This displays the number of times the receiving jitter buffer has overrun for this AV stream, during the sample interval.
Underruns	This displays the number of times the receiving jitter buffer has underrun for this AV stream, during the sample interval.
EmptyBufferTime	This displays the time period in milliseconds for which the buffer was empty for this AV stream, during the sample interval.

23.6.12 Main Stream RTP Sample Statistics

You can view information about each Main Stream instance's RTP statistics during the sample interval in the **RTPStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Sample**, then click **RTPStats**.

Figure 453 TR-135: STBService: ServiceMonitoring: MainStream RTP Sample Statistics



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 270 TR-135: STBService: ServiceMonitoring: MainStream RTP Sample Statistics

PARAMETER NAME	VALUE
SampleSeconds	This displays the number of seconds during which RTP data was collected for this AV stream, during the sample interval.
PacketsExpected	This displays the total number of RTP packets expected for this AV stream, during the sample interval.
PacketsDiscarded	This displays the number of packets discarded at the RTP player for this AV stream, during the sample interval.
PacketsOutOfSequence	This displays the number of packets out of sequence at the RTP level for this AV stream, during the sample interval.
PacketsReceived	This displays the number of RTP packets received for this AV stream, during the sample interval after EC (error correction).
PacketsReceivedBeforeEC	This displays the number of RTP packets received for this AV stream, during the sample interval before error correction.
RetransmitTimeouts	This displays the number of RTP/AVPF retransmission timeouts for this AV stream, during the sample interval.
PacketsLost	This displays the number of RTP packets lost for this stream.

Table 270 TR-135: STBService: ServiceMonitoring: MainStream RTP Sample Statistics

PARAMETER NAME	VALUE
PacketsLostBeforeEC	This displays the number of RTP packets lost for this stream before error correction.
LossEvents	This displays the number of Loss Events for this stream.
LossEventsBeforeEC	This displays the number of Loss Events for this stream, before error correction.
SevereLossIndexCount	This displays the number of Loss Events closer than the SevereLossMinDistance value.
SevereLossIndexCountBeforeEC	This displays the number of Loss Events closer than the SevereLossMinDistance value, before error correction.
MaximumLossDistance	This displays the maximum number of RTP packets between consecutive loss events for this AV stream, during the sample interval.
MaximumLossDistanceBeforeEC	This displays the maximum number of RTP packets between consecutive loss events for this AV stream, during the sample interval, before error correction.
AverageLossDistance	This displays the average number of RTP packets between consecutive loss events for this AV stream, during the sample interval.
AverageLossDistanceBeforeEC	This displays the average number of RTP packets between consecutive loss events for this AV stream, during the sample interval, before error correction.
MinimumLossDistance	This displays the minimum number of RTP packets between consecutive loss events for this AV stream, during the sample interval.
MinimumLossDistanceBeforeEC	This displays the minimum number of RTP packets between consecutive loss events for this AV stream, during the sample interval, before error correction.
SevereLossLengthCount	This displays the number of Loss Events longer than the SevereLossMinLength value.
SevereLossLengthCountBeforeEC	This displays the number of Loss Events longer than the SevereLossMinLength value, before error correction.
MaximumLossPeriod	This displays the length (in RTP packets) of the longest loss event for this AV stream, during the sample interval.
MaximumLossPeriodBeforeEC	This displays the length (in RTP packets) of the longest loss event for this AV stream, during the sample interval, before error correction.
AverageLossPeriod	This displays the average length (in RTP packets) of loss events for this AV stream, during the sample interval.
AverageLossPeriodBeforeEC	This displays the average length (in RTP packets) of loss events for this AV stream, during the sample interval, before error correction.
MinimumLossPeriod	This displays the length (in RTP packets) of the shortest loss event for this AV stream, during the sample interval.
MinimumLossPeriodBeforeEC	This displays the length (in RTP packets) of the shortest loss event for this AV stream, during the sample interval, before error correction.

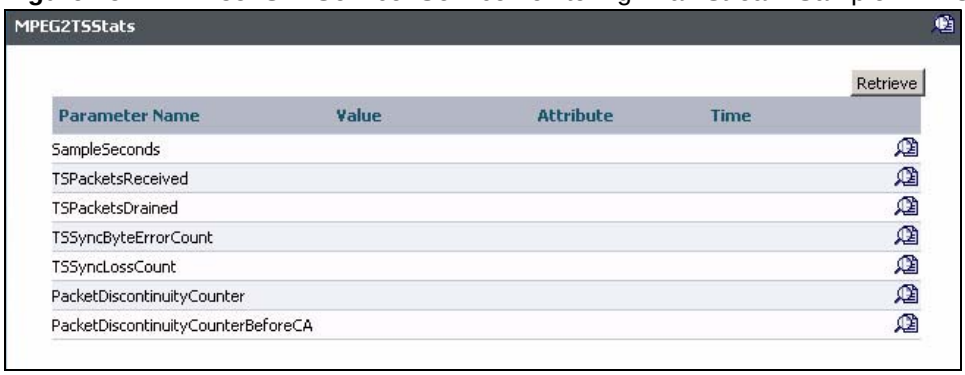
23.6.13 Main Stream MPEG2-TS Sample Statistics

You can view information about each Main Stream instance's MPEG2-TS statistics during the sample interval in the **MPEG2TSStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.

4 Click **Sample**, then click **MPEG2TSStats**.

Figure 454 TR-135: STBService: ServiceMonitoring: MainStream Sample MPEG2TSStats



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 271 TR-135: STBService: ServiceMonitoring: MainStream Sample MPEG2TSStats

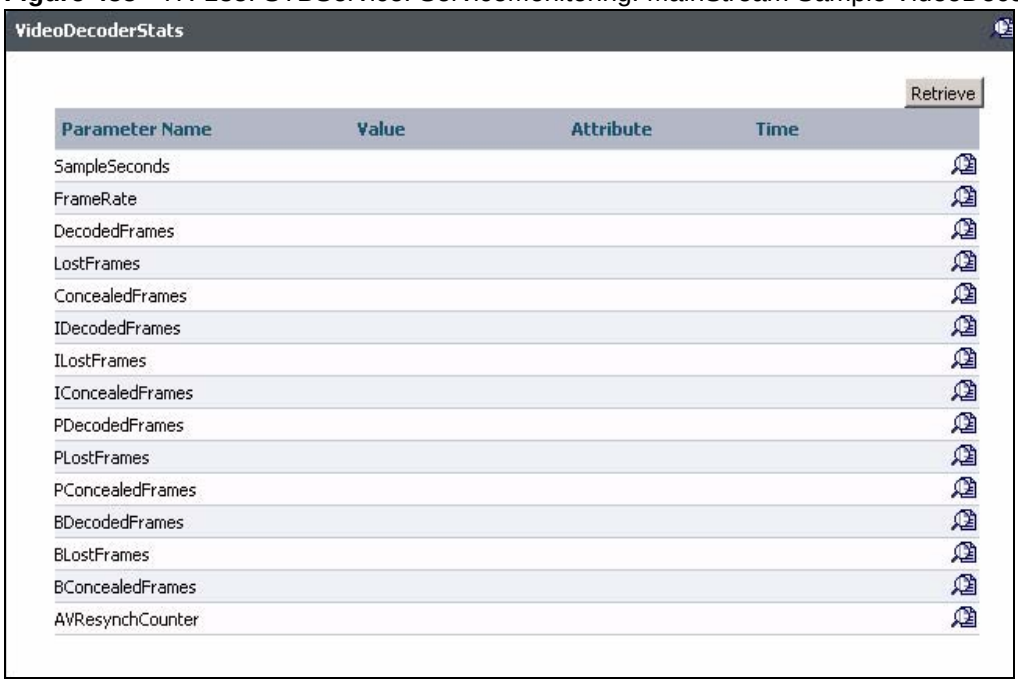
PARAMETER NAME	VALUE
SampleSeconds	This displays the number of seconds during which MPEG2-TS data was collected for this AV stream, during the sample interval.
TSPacketsReceived	This displays the number of MPEG2-TS packets received for this AV stream, during the sample interval.
TSSyncByteErrorCount	This displays the number of MPEG2-TS packets with an invalid transport synchronization byte received for this AV stream, during the sample interval.
TSSyncLossCount	This displays the number of MPEG2-TS loss of synchronization events for this AV stream, during the sample interval.
PacketDiscontinuityCounter	This displays the number of MPEG2-TS discontinuity errors that have been captured for this AV stream, during the sample interval.
PacketDiscontinuityCounterBeforeCA	This displays the number of MPEG2-TS discontinuity errors that have been captured for this AV stream, during the sample interval, before CA encryption (if applied).

23.6.14 Main Stream Video Decoder Sample Statistics

You can view information about each Main Stream instance's video decoder statistics during the sample interval in the **VideoDecoderStats** screen.

1 Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2 Click a number and **ServiceMonitoring**.
3 Click **MainStream**, then click a number to display the screen.
4 Click **Sample**, then click **VideoDecoderStats**.

Figure 455 TR-135: STBService: ServiceMonitoring: MainStream Sample VideoDecoder



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 272 TR-135: STBService: ServiceMonitoring: MainStream Sample VideoDecoder

PARAMETER NAME	VALUE
SampleSeconds	This displays the number of seconds during which video content data was collected for this AV stream, during the sample interval.
FrameRate	This displays the frame rate at which the STB plays the video content for this AV stream, during the sample interval.
DecodedFrames	This displays the number of video frames that were decoded completely (errorless frames) or partially (corrupted frames) for this AV stream, during the sample interval.
LostFrames	This displays the number of video frames that could not be reproduced by the STB for this AV stream, during the sample interval.
ConcealedFrames	This displays the number of video frames (for this AV stream, during the sample interval) reproduced by the STB for which information was missing and loss concealment was applied.
IDecodedFrames	This displays the number of I frames that were decoded completely or partially for this AV stream, during the sample interval.
ILostFrames	This displays the number of I frames that could not be reproduced by the STB, for this AV stream, during the sample interval.
IConcealedFrames	This displays the number of I frames (for this AV stream, during the sample interval) reproduced by the STB for which information was missing and loss concealment was applied.
PDecodedFrames	This displays the number of P frames that were decoded completely or partially for this AV stream, during the sample interval.
PLostFrames	This displays the number of P frames that could not be reproduced by the STB, for this AV stream, during the sample interval.

Table 272 TR-135: STBService: ServiceMonitoring: MainStream Sample VideoDecoder

PARAMETER NAME	VALUE
PConcealedFrames	This displays the number of P frames (for this AV stream, during the sample interval) reproduced by the STB for which information was missing and loss concealment was applied.
BDecodedFrames	This displays the number of B frames that were decoded completely or partially for this AV stream, during the sample interval.
BLostFrames	This displays the number of B frames that could not be reproduced by the STB, for this AV stream, during the sample interval.
BConcealedFrames	This displays the number of B frames (for this AV stream, during the sample interval) reproduced by the STB for which information was missing and loss concealment was applied.
AVResynchCounter	This displays the number of AV resynchronizations performed by the STB, for this AV stream, during the sample interval.

23.6.15 Main Stream Audio Decoder Sample Statistics

You can view information about each Main Stream instance's audio decoder statistics during the sample interval in the **AudioDecoderStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Sample**, then click **AudioDecoderStats**.

Figure 456 TR-135: STBService: ServiceMonitoring: MainStream Sample AudioDecoder

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 273 TR-135: STBService: ServiceMonitoring: MainStream Sample AudioDecoder

PARAMETER NAME	VALUE
SampleSeconds	This displays the number of seconds during which audio data was collected for this AV stream, during the sample interval.
DecodedFrames	This displays the number of audio frames that were decoded completely or partially for this AV stream, during the sample interval.
DecodingErrors	This displays the number of audio decoding errors for this AV stream, during the sample interval.

23.6.16 Main Stream Video Response Sample Statistics

You can view information about each Main Stream instance's video decoder statistics during the sample interval in the **VideoResponseStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Sample**, then click **VideoResponseStats**.

Figure 457 TR-135: STBService: ServiceMonitoring: MainStream Sample VideoResponse

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 274 TR-135: STBService: ServiceMonitoring: MainStream Sample VideoResponse

PARAMETER NAME	VALUE
SampleSeconds	This displays the number of seconds during which Main Stream instance data was collected for this AV stream, during the sample interval.
MinimumVideoSystem Response	This displays the minimum time period between the transmission of an IGMP JOIN command (or an RTSP SETUP command) and the display of the first I frame, for this AV stream, during the sample interval.
MaximumVideoSyste mResponse	This displays the maximum time period between the transmission of an IGMP JOIN command (or an RTSP SETUP command) and the display of the first I frame, for this AV stream, during the sample interval.

23.6.17 Main Stream High Level Metric Sample Statistics

You can view information about each Main Stream instance's high level metric statistics during the sample interval in the **HighLevelMetricStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Sample**, then click **HighLevelMetricStats**.

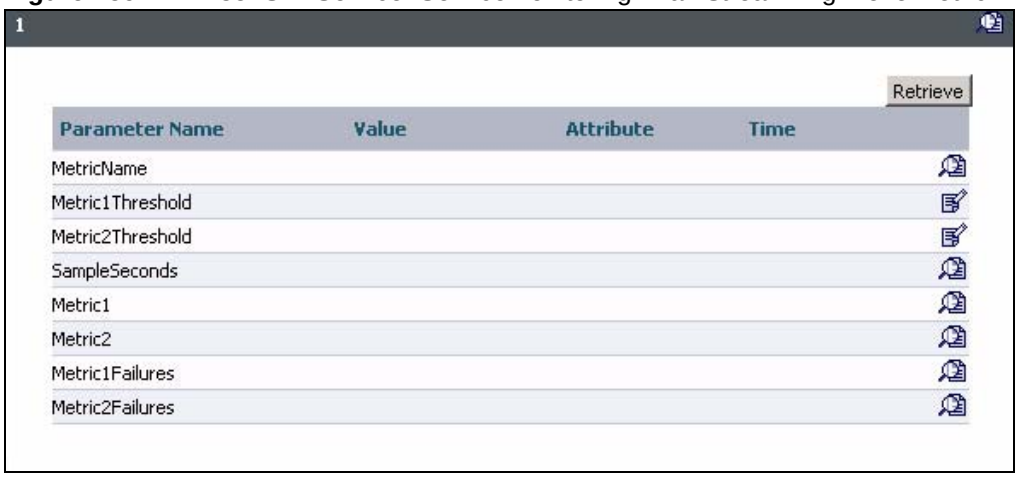
Figure 458 TR-135: STBService: ServiceMonitoring: MainStream HighLevelMetricStats

23.6.18 Main Stream High Level Metric Sample Statistics Details

You can view information about each Main Stream instance's high level metric statistics during the sample interval in the detailed **HighLevelMetricStats** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number and **ServiceMonitoring**.
3. Click **MainStream**, then click a number to display the screen.
4. Click **Sample**, then click **HighLevelMetricStats**.
5. Click a number to display the screen.

Figure 459 TR-135: STBService: ServiceMonitoring: MainStream HighLevelMetric Details



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 275 TR-135: STBService: ServiceMonitoring: MainStream HighLevelMetric Details

PARAMETER NAME	VALUE
MetricName	This displays the name associated with the high-level metric.
Metric1Threshold	This displays the value controlling the of the **Metric1Failures** parameter.
Metric2Threshold	This displays the value controlling the of the **Metric2Failures** parameter.
SampleSeconds	This displays the number of seconds during which this high level metric's data was collected, for this AV stream, during the sample interval.
Metric1	This displays a high level metric calculated for this AV stream during the sample interval. A lower value represents an inferior QoE than a higher value.
Metric2	This displays a second high level metric calculated for this AV stream during the sample interval. A lower value represents an inferior QoE than a higher value.

Table 275 TR-135: STBService: ServiceMonitoring: MainStream HighLevelMetric Details

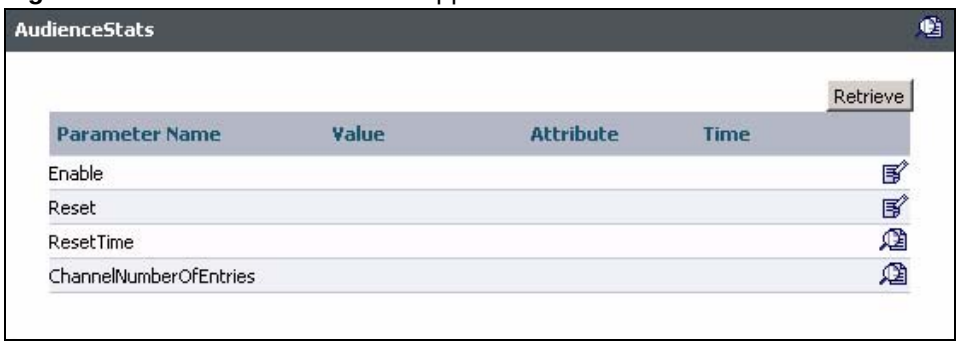
PARAMETER NAME	VALUE
Metric1Failures	This displays the number of times, since the last time this main stream and sample statistics collection were enabled, that a new value of **Metric1** was less than or equal to the **Metric1Threshold**.
Metric2Failures	This displays the number of times, since the last time this main stream and sample statistics collection were enabled, that a new value of **Metric2** was less than or equal to the **Metric2Threshold**.

23.7 STB Audience Statistics

You can view the audience statistics settings in the **Applications** > **Audience Statistics** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number, **Applications** and then **AudienceStats** to display the screen.

Figure 460 TR-135: STBService: Applications: Audience Statistics



The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 276 TR-135: STBService: Applications: Audience Statistics

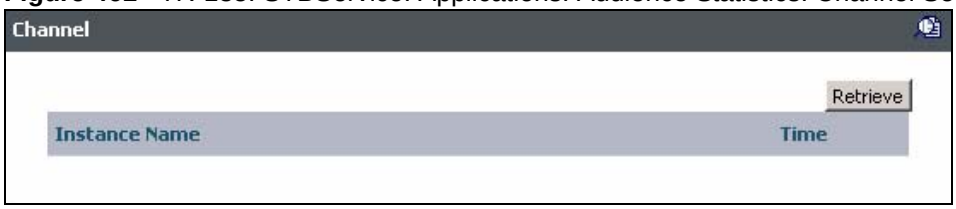
PARAMETER NAME	VALUE
Enable	This displays whether the collection of viewing statistics is enabled.
Reset	This displays whether the viewing statistics table is reset. When this value it is read, it is always false.
ResetTime	This displays the number of seconds since the audience statistics were last enabled or reset.
ChannelNumberOfEntries	This displays the number of Channel instances.

23.7.1 Channel Settings

You can view the channel settings in the **Channel** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number, **Applications**, **AudienceStats** and then **Channel** to display the screen.

Figure 461 TR-135: STBService: Applications: Audience Statistics: Channel Settings



23.7.2 Channel Statistics

You can view the channel settings in the detailed **Channel** screen.

1. Select a registered device in the Device List window and click **Data Model** > **Device** > **Services** > **STBService**.
2. Click a number, **Applications**, **AudienceStats** and then **Channel**.
3. Click a number to display the screen.

Figure 462 TR-135: STBService: Applications: Audience Statistics: Channel Statistics

The following table describes the fields in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 277 TR-135: STBService: Applications: Audience Statistics: Channel Statistics

PARAMETER NAME	VALUE
Name	This displays the name of the TV channel being displayed in the main screen.
Duration	This displays the length of time, in seconds, that the TV channel has been displayed.

PART VIII
Device 1.0 (TR-106)

This part contains the following chapters.

- General Device Setup (473)
- LAN (481)

24

General Device Setup

This chapter describes the general **Configuration** screens you display to view and set basic device settings.

24.1 Device

You can view a summary information of the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Log into Vantage Access using a manager account and click the **Provision Manager** icon in the control panel.
2. Select a device in the Device List window.
3. Click **Provision** > **Data Model** > **Device**.

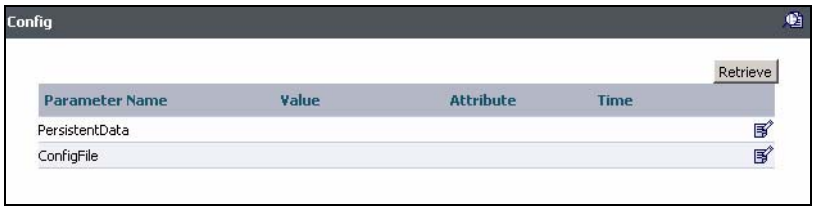
Figure 463 TR-106: Device

24.2 Device Configuration

Display the **DeviceConfig** screen to view generation information about the configuration file on a device.

Click **Device** > **Config**.

Figure 464 TR-106: Device: Config



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 278 TR-106: Device: Config

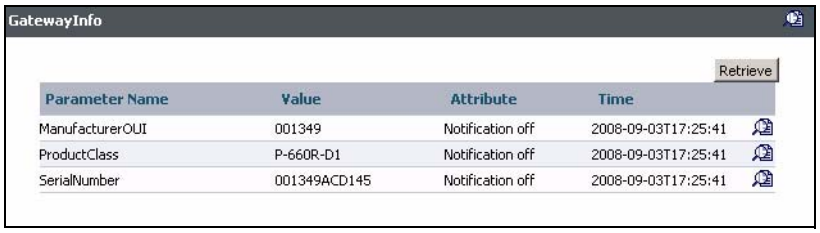
PARAMETER NAME	VALUE
PersistentData	This field displays the configuration data that must remain intact after a device system reboot.
ConfigFile	This field displays the name of the vendor specific configuration file used for the device.

24.3 Gateway Information

Display the **GatewayInfo** screen to view general information about the gateway device.

Click **Device** > **GatewayInfo**.

Figure 465 TR-106: Device: GatewayInfo



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 279 TR-106: Device: GatewayInfo

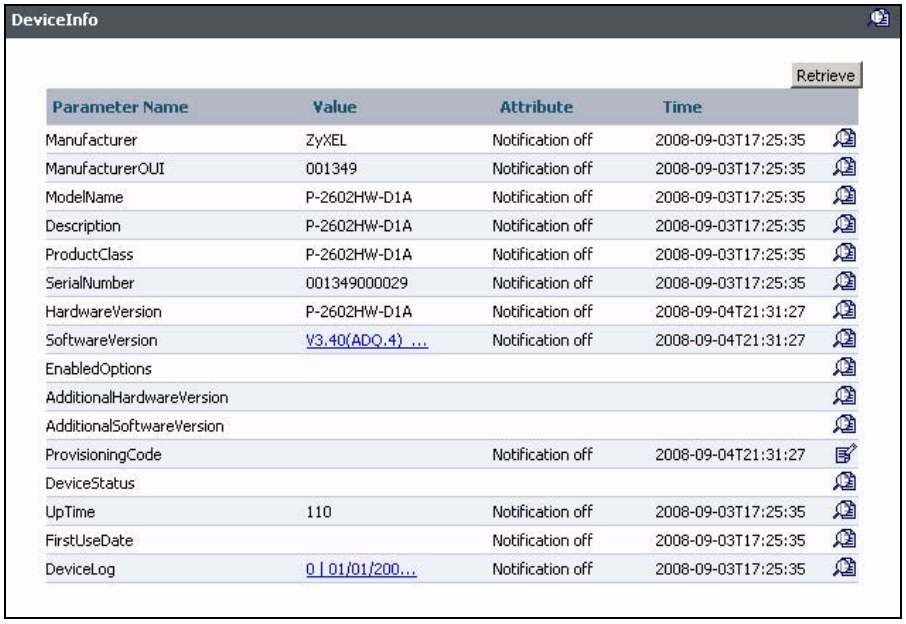
PARAMETER NAME	VALUE
ManufacturerOUI	This field displays the six-hexadecimal-digit OUI (Organization Unit Identifier) of the company. The OUI is a unique number assigned by the IANA. Devices produced by the same company have the same hard-wired OUI.
ProductClass	This field identifies the product or class over which the **SerialNumber** parameter is unique.
SerialNumber	This field displays the gateway device serial number.

24.4 Device Information

View detailed information about the device in the **DeviceInfo** screen.

Click **InternetGatewayDevice** > **DeviceInfo** to display the general information of the selected device.

Figure 466 TR-106: Device: Info



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 280 TR-106: Device: Info

PARAMETER NAME	VALUE
Manufacturer	This is the name of the company that produced this device.
ManufacturerOUI	This field displays the six-hexadecimal-digit OUI (Organization Unit Identifier) of the company. The OUI is a unique number assigned by the IANA. Devices produced by the same company have the same hard-wired OUI.
ModelName	This field displays the device model name.
Description	This field displays additional information about the device.
ProductClass	This field identifies the product or class over which the **SerialNumber** parameter is unique.
SerialNumber	This field displays the device serial number.
HardwareVersion	This field displays the hardware model name.
SoftwareVersion	This field displays the firmware version number.
EnabledOptions	This field displays the name of the options enabled on the device.
AdditionalHardwareVersion	This field displays the available information about the additional hardware version.
AdditionalSoftwareVersion	This field displays the available information about the additional software version.
ProvisioningCode	The provisioning code is used by the service provider to identify specific parameter settings for the device. Enter the identifier of the DSL service provider or provisioning information. You can enter up to 64 characters (use only A-Z, 0-9 and “.” with no spaces allowed).
DeviceStatus	This field displays the current operational status of the device. The device’s status may be "**Up**", "**Initializing**", "**Error**", or "**Disabled**".
UpTime	This field displays the time (in seconds) since the device was last restarted.

Table 280 TR-106: Device: Info (continued)

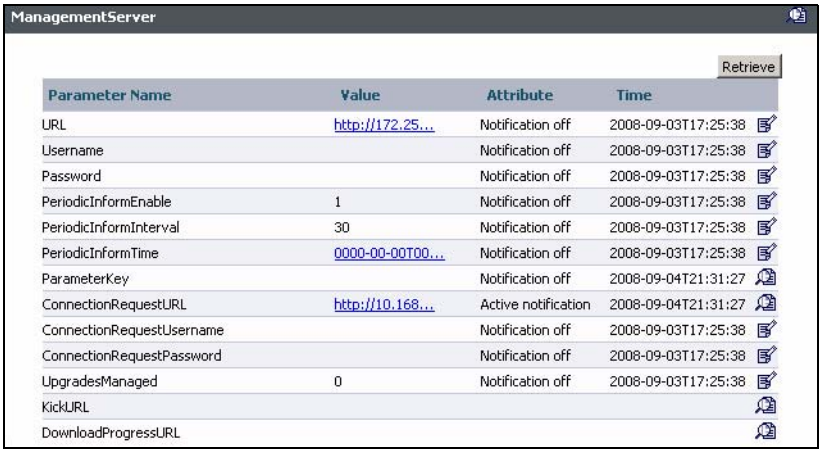
PARAMETER NAME	VALUE
FirstUseDate	This field displays the time and date the device first established a network connection.
DeviceLog	Enter additional information for this device.

24.5 Management Server

Use the **Management Server** screen to configure settings on the device to connect to the Vantage Access server.

Click **InternetGatewayDevice** > **ManagementServer**.

Figure 467 TR-106: ManagementServer



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 281 TR-106: ManagementServer

PARAMETER NAME	VALUE
URL	This field displays the address of the Vantage Access server to which the device connects for remote management. For example, “http://www.zyxel.com/TR069”.
UserName	This field displays the user name the device uses to access Vantage Access.
Password	This field displays the password (up to 256 alphanumeric characters) associated with the user name above. **Note: You must configure the same access user name and password on the device and the Vantage Access server.**
PeriodicInformEnable	This field displays **true** to indicate that the device is set to regularly send device information updates to Vantage Access. This field displays **false** to indicate that this feature is disabled. In this case, you must then manually update device information changes.

Table 281 TR-106: ManagementServer (continued)

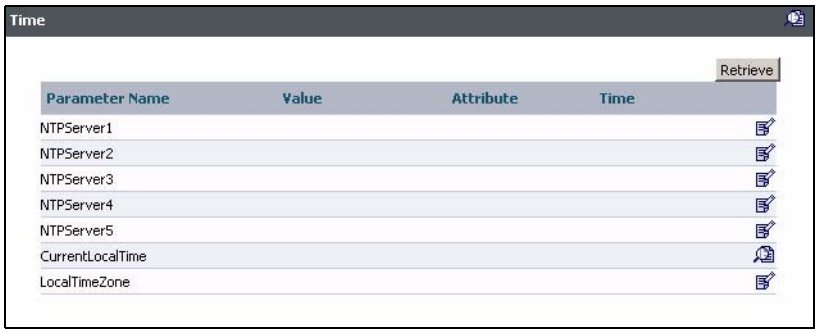
PARAMETER NAME	VALUE
PeriodicInformInterval	This field is applicable when the **PeriodicInformEnable** field is **1**. This field displays the time (in seconds) the device is to wait before sending device request information updates to Vantage Access.
PeriodicInformTime	This field is applicable when in the **PeriodicInformEnable** field is **1**. This field displays the reference time and date the device is to initiate the information updates. The time in the format yyyy-mm-ddThh:mm:ss.
ParameterKey	This field displays the parameter that is changed from the most recent information update.
ConnectionRequestURL	This field displays the URL of the device to which Vantage Access sends a connection request.
ConnectionRequestUsername	This field displays the user name Vantage Access uses to access the device. This is required if you want Vantage Access to initiate a connection and access the device.
ConnectionRequestPassword	This field displays the password associated with the user name above.
UpgradesManaged	This field displays **1** to allow Vantage Access to upgrade firmware on the device. This field displays **0** to indicate that remote firmware upgrade through Vantage Access is disabled.
KickURL	This field displays the URL on the LAN from which the device can initiate a Kick request.
DownloadProgressURL	This field displays the URL of a web site on the LAN to which a user's web browser is redirected to display the file transfer progress of the device.

24.6 Time

Use the **Time** screen to configure time settings (such as the network time server and time zone) on the device.

Click **InternetGatewayDevice** > **Time**.

Figure 468 TR-106: Time



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 282 TR-106: Time

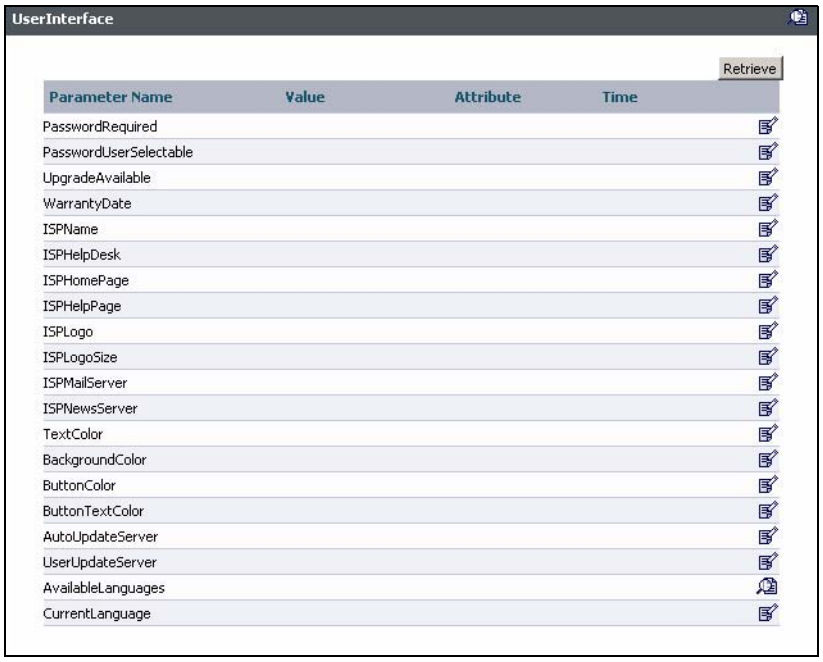
PARAMETER NAME	VALUE
NTPServer1 .. 5	This field displays the IP address or host name of a time server the device is to use to update the system time. For example, “http://www.zyxel.com”.
CurrentLocalTime	This field displays the current system time on the device.
LocalTimeZone	This field displays the time offset from the UTC (Universal Time Coordinate). For example, +08:00.

24.7 User Interface

Use the **UserInterface** screen to configure remote management settings to access the web configurator on the device.

Click **InternetGatewayDevice** > **UserInterface** to display the screen as shown.

Figure 469 TR-106: UserInterface



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 283 TR-106: UserInterface

PARAMETER NAME	VALUE
PasswordRequired	This field displays **1** if a password is required to log into the web configurator on the device. This field displays **0** if a password is not required.
PasswordUserSelectable	This field displays **1** if a user can specify a different the password for Auto-configuration on the device; otherwise it displays **0**.
UpgradeAvailable	This field displays **1** to allow a user to view the upgrade information on the device; otherwise it displays **0**.
WarrantyDate	This field displays the time the warranty on the device expires.
ISPName	This field displays the name of your Internet Service Provider (ISP).
ISPHelpDesk	This field displays the telephone number of your ISP's help desk.
ISPHomePage	This field displays the web site address of your ISP's home page.
ISPHelpPage	This field displays the web site address of your ISP's online support web page.
ISPLogo	This field displays the base64 encoded character for your ISP's logo graphic. The graphic can be a GIF or JEPG file smaller than 4095 bytes.
ISPLogoSize	This field displays the size of the logo graphic file.
ISPMailServer	This field displays the address of your ISP's mail server.
ISPNewsServer	This field displays the address of your ISP's news server.
TextColor	This field displays the color (in six-character RGB number) of the text in the web configurator. For example, FFFFFF means white.
BackgroundColor	This field displays the color (in six-character RGB number) of the background in the web configurator. For example, FFFFFF means white.
ButtonColor	This field displays the color (in six-character RGB number) of the buttons in the web configurator. For example, FFFFFF means white.
ButtonTextColor	This field displays the color (in six-character RGB number) of the text on the buttons in the web configurator. For example, FFFFFF means white.
AutoUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen is **1** (see Section 24.5 on page 476). This field displays the address of the server the device is to check for new firmware. If a new firmware is available, the device is to update the firmware automatically.
UserUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen is **0** (see Section 24.5 on page 476). This field displays the address of the server a user can check for new firmware updates available for the device.
AvailableLanguage	This field displays a comma-separated list of languages supported for the user interface.
CurrentLanguage	This field displays the language the device is using for the user interface.

25

LAN

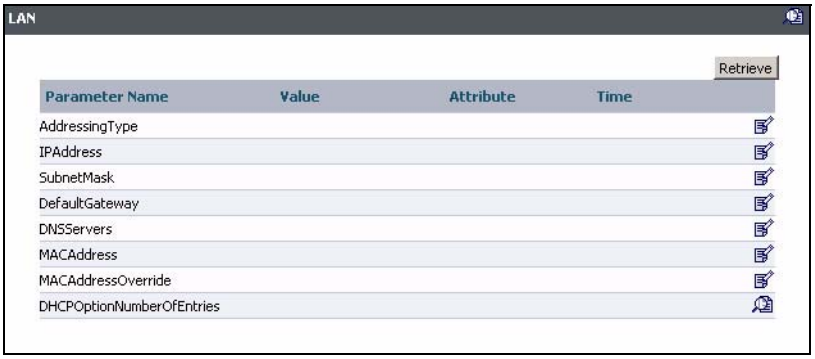
This chapter describes the LAN screens for the Device root object.

25.1 LAN

Display the **LAN** screen to view and configure LAN interface settings on the device.

Select a registered device in the Device List window and click Device > LAN to display the screen.

Figure 470 TR-106: LAN



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 284 TR-106: LAN

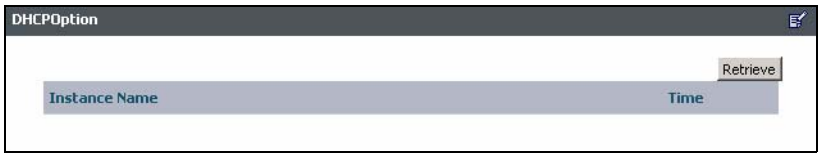
PARAMETER NAME	VALUE
AddressingType	This field displays how the device is to obtain an IP address for the LAN interface.
IPAddress	This field displays the IP address on the LAN interface.
SubnetMask	This field displays the subnet mask for the LAN interface.
DefaultGateway	This field displays the IP address of the default gateway device.
DNSServers	This field displays the comma-separated list of IP address(es) of the DNS server(s).
MACAddress	This field displays the MAC address on the LAN interface.
MACAddressOverride	This field displays whether the device allows modification of the MAC address on the LAN interface.
DHCPOptionNumberOfEntries	This field displays the number of entries in the DHCP options table.

25.2 DHCP Options

Display the DHCPOption screen to view the DHCP options table on the device.

Select a registered device in the Device List window and click **Device > LAN > DHCPOptions** to display the screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Figure 471 TR-106: LAN: DHCPOption

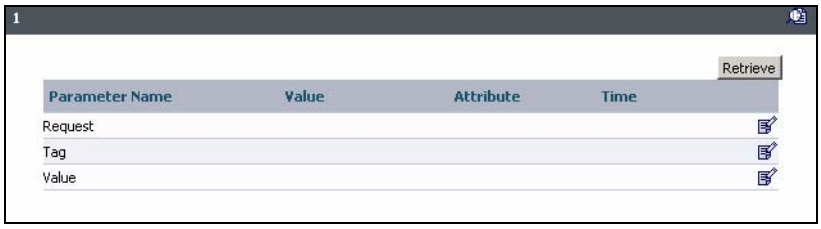


25.2.1 DHCP Options Details

Display the detailed **DHCPOption** screen to view or configure settings in the DHCP options table.

Select a registered device in the Device List window and click **Device > LAN > DHCPOption**. Click a number to display the screen.

Figure 472 TR-106: LAN: DHCPOption: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 285 TR-106: LAN: DHCPOption: Details

PARAMETER NAME	VALUE
Request	This field displays whether this entry is a request to the DHCP server or a value to be sent by the DHCP client.
Tag	This field displays the name of the DHCP option tag as defined in RFC 2132.
Value	This field displays the value the DHCP client is to send.

25.3 LAN Statistics

Display the **Stats** screen to view statistics for the default LAN interface on a device.

Select a registered device in the Device List window and click **Device > LAN**. Click **Stats** to display the screen.

Figure 473 TR-106: LAN: Stats

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 286 TR-106: LAN: Stats

PARAMETER NAME	VALUE
ConnectionUpTime	This field displays the time the LAN interface has been up.
TotaleBytesSent	This field displays the total number of bytes transmitted on the LAN since the device was last restarted.
TotalBytesReceived	This field displays the total number of bytes received on the LAN since the device was last restarted.
TotalPacketsSent	This field displays the total number of packets transmitted on the LAN since the device was last restarted.
TotalPacketsReceived	This field displays the total number of packets received on the LAN since the device was last restarted.
CurrentDayInterval	This field displays the number of seconds since the beginning of the period used for collection of CurrentDay statistics.
CurrentDayBytesSent	This field displays the number of bytes transmitted on the LAN since the beginning of the current-day interval as specified by the CurrentDayInterval parameter.
CurrentDayBytesReceived	This field displays the number of bytes received on the LAN since the beginning of the current-day interval as specified by the CurrentDayInterval parameter.
CurrentDayPacketsSent	This field displays the number of packets transmitted on the LAN since the beginning of the current-day interval as specified by the CurrentDayInterval parameter.
CurrentDayPacketsReceived	This field displays the number of packets received on the LAN since the beginning of the current-day interval as specified by the CurrentDayInterval parameter.
QuaterHourInterval	This field displays the number of seconds since the beginning of the period used for collection of QuaterHour statistics.
QuaterHourBytesSent	This field displays the number of bytes transmitted on the LAN since the beginning of the quarter-hour interval as specified by the QuaterHourInterval parameter.
QuaterHourBytesReceived	This field displays the number of bytes received on the LAN since the beginning of the quarter-hour interval as specified by the QuaterHourInterval parameter.

Table 286 TR-106: LAN: Stats (continued)

PARAMETER NAME	VALUE
QuaterHourPacketsSent	This field displays the number of packets transmitted on the LAN since the beginning of the quarter-hour interval as specified by the QuaterHourInterval parameter.
QuaterHourPacketsReceived	This field displays the number of packets received on the LAN since the beginning of the quarter-hour interval as specified by the QuaterHourInterval parameter.

25.4 IP Ping Diagnostics

Use the **IPPingDiagnostics** screen to view or configure IP Ping test settings on a device.

Select a registered device in the Device List window and click **Device** > **LAN** > **IPPingDiagnostics** to display the screen.

Figure 474 TR-106: LAN: DHCPOption: Details

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 287 TR-106: LAN: DHCPOption: Details

PARAMETER NAME	VALUE
DiagnosticsState	This field displays the availability of the diagnostics result.
Host	This field displays the name or the IP address of the host device to ping.
NumberOfRepetitions	This field displays the number of ping tests to perform before reporting the test result.
Timeout	This field displays the timeout (in milliseconds) for a ping test.
DataBlockSize	This field displays the size of the data block (in bytes) to send for each traceroute.
DSCP	This field displays the DiffServ Code Point (DSCP) value for the ping packets to send.
SuccessCount	This field displays the number of successful ping tests.
FailureCount	This field displays the number of unsuccessful ping tests.
AverageResponseTime	This field displays the average response time (in milliseconds) of all ping tests.

Table 287 TR-106: LAN: DHCPOption: Details (continued)

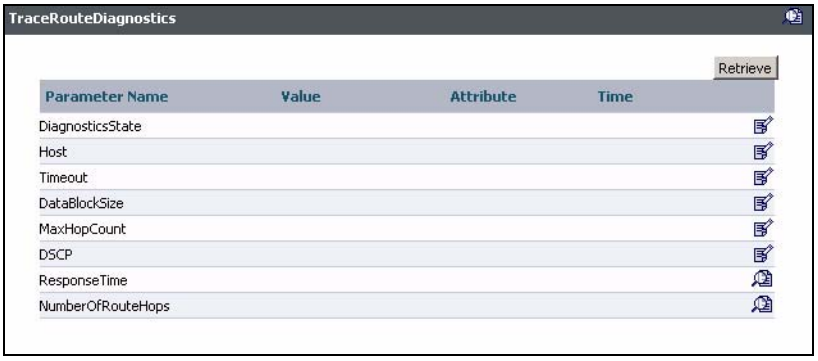
PARAMETER NAME	VALUE
MinimumResponseTime	This field displays the minimum response time (in milliseconds) of all ping tests.
MaximumResponseTime	This field displays the maximum response time (in milliseconds) of all ping tests.

25.5 Traceroute Diagnostics

Use the **TraceRouteDiagnostics** screen to view or configure traceroute test settings for a device.

Select a registered device in the Device List window and click **Device** > **LAN**. Click **TraceRouteDiagnostics**.

Figure 475 TR-106: LAN: TraceRouteDiagnostics



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 288 TR-106: LAN: TraceRouteDiagnostics

PARAMETER NAME	VALUE
DiagnosticsState	This field displays the availability of the diagnostics result.
Host	This field displays the name or the IP address of the host device to which to trace route.
Timeout	This field displays the timeout (in milliseconds) for a trace route test.
DataBlockSize	This field displays the size of the data block (in bytes) to send for each traceroute.
MaxHopCount	This field displays the maximum number of hops used in outgoing probe packets.
DSCP	This field displays the DiffServ Code Point (DSCP) value for the outgoing probe packets.
ResponseTime	This field displays the response time (in milliseconds) of the most recent traceroute test.
NumberOfRouteHops	This field displays the number of hops for the discovered route.

25.5.1 Route Hops

Display the **RouteHops** screen to view the hops along a discovered route. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Device** > **LAN** > **TraceRouteDiagnostics** > **RouteHops** to display the screen.

Figure 476 TR-106: LAN: TraceRouteDiagnostics: RouteHops

25.5.2 Route Hops Details

Display the detailed **RouteHops** screen to view the name or the IP address of a hop on a discovered route. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Device** > **LAN**.
2. Click **TraceRouteDiagnostics**.
3. Click **RouteHops** and a number to display the screen.

Figure 477 TR-106: LAN: TraceRouteDiagnostics: RouteHops: Details

PART IX
Device 1.1 (TR-106 Amendment 1)

This part contains the following chapters.

- General Device Setup (489)
- LAN (497)

26

General Device Setup

This chapter describes the general **Configuration** screens you display to view and set basic device settings.

26.1 Device

You can view a summary information of the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Log into Vantage Access using a manager account and click the **Provision Manager** icon in the control panel.
2. Select an STB device in the Device List window.
3. Click **Provision** > **Data Model** > **Device**.

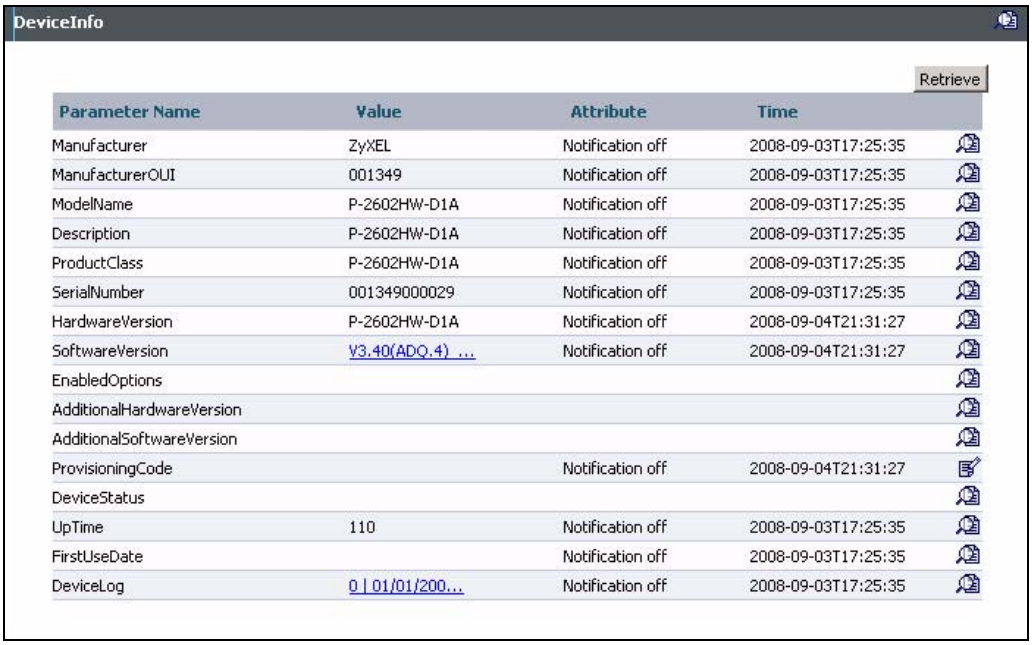
Figure 478 TR-106 Amendment 1: Device

26.2 Device Information

View detailed information about the device in the **DeviceInfo** screen.

Click **Device** > **DeviceInfo** to display the general information of the selected device.

Figure 479 TR-106 Amendment 1: Device: Info



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 289 TR-106 Amendment 1: Device: Info

PARAMETER NAME	VALUE
Manufacturer	This is the name of the company that produced this device.
ManufacturerOUI	This field displays the six-hexadecimal-digit OUI (Organization Unit Identifier) of the company. The OUI is a unique number assigned by the IANA. Devices produced by the same company have the same hard-wired OUI.
ModelName	This field displays the device model name.
Description	This field displays additional information about the device.
ProductClass	This field identifies the product or class over which the **SerialNumber** parameter is unique.
SerialNumber	This field displays the device serial number.
HardwareVersion	This field displays the hardware model name.
SoftwareVersion	This field displays the firmware version number.
EnabledOptions	This field displays the name of the options enabled on the device.
AdditionalHardwareVersion	This field displays the available information about the additional hardware version.
AdditionalSoftwareVersion	This field displays the available information about the additional software version.
ProvisioningCode	The provisioning code is used by the service provider to identify specific parameter settings for the device. Enter the identifier of the DSL service provider or provisioning information. You can enter up to 64 characters (use only A-Z, 0-9 and “.” with no spaces allowed).
DeviceStatus	This field displays the current operational status of the device. The device’s status may be "**Up**", "**Initializing**", "**Error**", or "**Disabled**".

Table 289 TR-106 Amendment 1: Device: Info (continued)

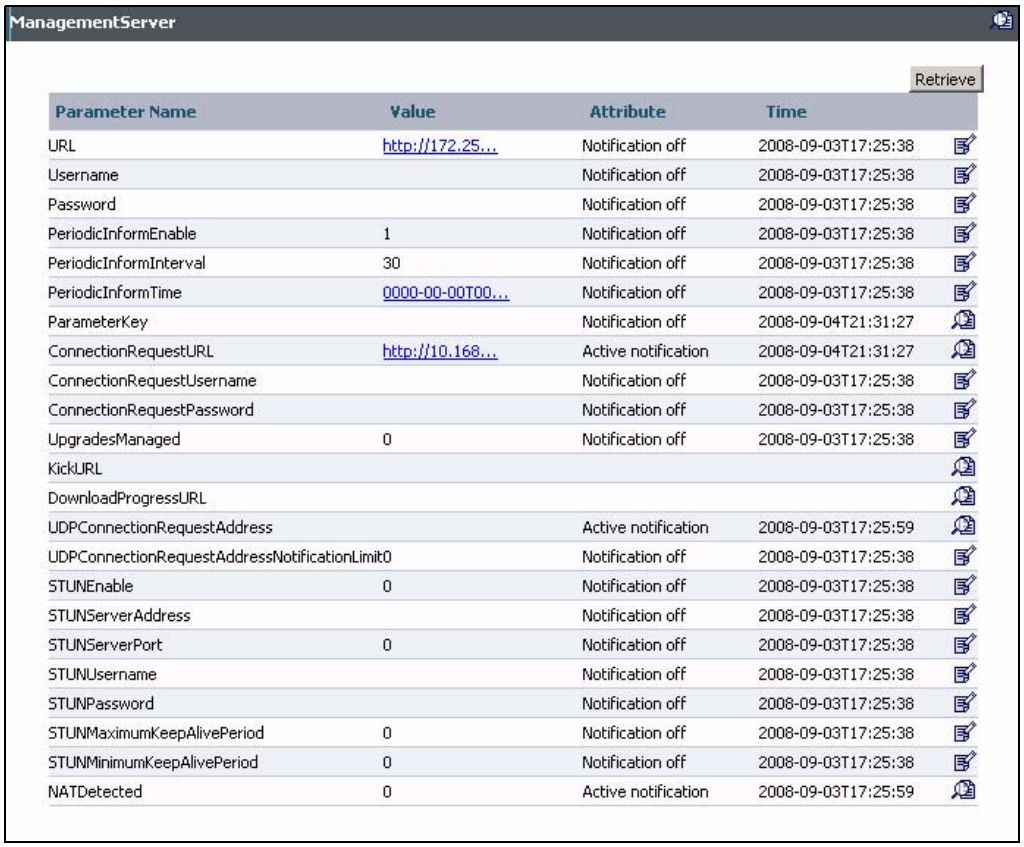
PARAMETER NAME	VALUE
UpTime	This field displays the time (in seconds) since the device was last restarted.
FirstUseDate	This field displays the time and date the device first established a network connection.
DeviceLog	Enter additional information for this device.

26.3 Management Server

Use the **Management Server** screen to configure settings on the device to connect to the Vantage Access server.

Click **Device** > **ManagementServer**.

Figure 480 TR-106 Amendment 1: ManagementServer



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 290 TR-106 Amendment 1: ManagementServer

PARAMETER NAME	VALUE
URL	This field displays the address of the Vantage Access server to which the device connects for remote management. For example, “http://www.zyxel.com/TR106-a-1”.
UserName	This field displays the user name the device uses to access Vantage Access.
Password	This field displays the password (up to 256 alphanumeric characters) associated with the user name above. **Note: You must configure the same access user name and password on the device and the Vantage Access server.**
PeriodicInformEnable	This field displays **true** to indicate that the device is set to regularly send device information updates to Vantage Access. This field displays **false** to indicate that this feature is disabled. In this case, you must then manually update device information changes.
PeriodicInformInterval	This field is applicable when the **PeriodicInformEnable** field is **1**. This field displays the time (in seconds) the device is to wait before sending device request information updates to Vantage Access.
PeriodicInformTime	This field is applicable when in the **PeriodicInformEnable** field is **1**. This field displays the reference time and date the device is to initiate the information updates. The time in the format yyyy-mm-ddThh:mm:ss.
ParameterKey	This field displays the parameter that is changed from the most recent information update.
ConnectionRequestURL	This field displays the URL of the device to which Vantage Access sends a connection request.
ConnectionRequestUsername	This field displays the user name Vantage Access uses to access the device. This is required if you want Vantage Access to initiate a connection and access the device.
ConnectionRequestPassword	This field displays the password associated with the user name above.
UpgradesManaged	This field displays **1** to allow Vantage Access to upgrade firmware on the device. This field displays **0** to indicate that remote firmware upgrade through Vantage Access is disabled.
KickURL	This field displays the URL on the LAN from which the device can initiate a Kick request.
DownloadProgressURL	This field displays the URL of a web site on the LAN to which a user’s web browser is redirected to display the file transfer progress of the device.
UDPConnectionRequestAddress	This field displays the URL of the device to which Vantage Access sends a UDP connection request.
UDPConnectionRequestAddressNotificationLimit	This field displays the maximum number of times the UDP connection request is made.
STUNEnable	This displays whether STUN (Simple Traversal of User Datagram Protocol through Network Address Translators (NATs)) is enabled or not.
STUNServerAddress	This displays the STUN server’s IP address.
STUNServerPort	This displays the port number of the STUN server.

Table 290 TR-106 Amendment 1: ManagementServer (continued)

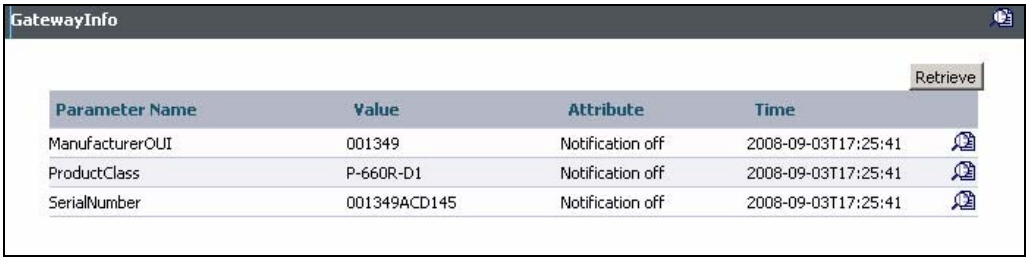
PARAMETER NAME	VALUE
STUNUsername	This displays the STUN server username.
STUNPassword	This displays the STUN server password associated with the **STUNUsername**.
STUNMaximumKeepAlivePeriod	This displays the STUN server maximum keep-alive period.
STUNMinimumKeepAlivePeriod	This displays the STUN server minimum keep-alive period.
NATDetected	This displays whether NAT (Network Address Translation) is in operation.

26.4 Gateway Information

Display the **GatewayInfo** screen to view general information about the gateway device.

Click **Device** > **GatewayInfo**.

Figure 481 TR-106 Amendment 1: Device: GatewayInfo



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 291 TR-106 Amendment 1: Device: GatewayInfo

PARAMETER NAME	VALUE
ManufacturerOUI	This field displays the six-hexadecimal-digit OUI (Organization Unit Identifier) of the company. The OUI is a unique number assigned by the IANA. Devices produced by the same company have the same hard-wired OUI.
ProductClass	This field identifies the product or class over which the **SerialNumber** parameter is unique.
SerialNumber	This field displays the gateway device serial number.

26.5 Device Configuration

Display the **DeviceConfig** screen to view generation information about the configuration file on a device.

Click **Device** > **Config**.

Figure 482 TR-106 Amendment 1: Device: Config

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 292 TR-106 Amendment 1: Device: Config

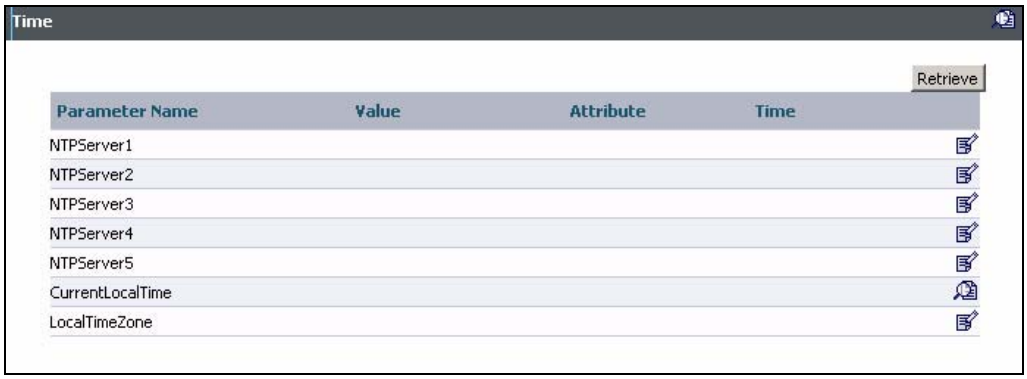
PARAMETER NAME	VALUE
PersistentData	This field displays the configuration data that must remain intact after a device system reboot.
ConfigFile	This field displays the name of the vendor specific configuration file used for the device.

26.6 Time

Use the **Time** screen to configure time settings (such as the network time server and time zone) on the device.

Click **Device** > **Time**.

Figure 483 TR-106 Amendment 1: Time



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 293 TR-106 Amendment 1: Time

PARAMETER NAME	VALUE
NTPServer1 .. 5	This field displays the IP address or host name of a time server the device is to use to update the system time. For example, “http://www.zyxel.com”.
CurrentLocalTime	This field displays the current system time on the device.
LocalTimeZone	This field displays the time offset from the UTC (Universal Time Coordinate). For example, +08:00.

26.7 User Interface

Use the **UserInterface** screen to configure remote management settings to access the web configurator on the device.

Click **Device** > **UserInterface** to display the screen as shown.

Figure 484 TR-106 Amendment 1: UserInterface

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 294 TR-106 Amendment 1: UserInterface

PARAMETER NAME	VALUE
PasswordRequired	This field displays **1** if a password is required to log into the web configurator on the device. This field displays **0** if a password is not required.
PasswordUserSelectable	This field displays **1** if a user can specify a different the password for Auto-configuration on the device; otherwise it displays **0**.
UpgradeAvailable	This field displays **1** to allow a user to view the upgrade information on the device; otherwise it displays **0**.
WarrantyDate	This field displays the time the warranty on the device expires.
ISPName	This field displays the name of your Internet Service Provider (ISP).
ISPHelpDesk	This field displays the telephone number of your ISP's help desk.
ISPHomePage	This field displays the web site address of your ISP's home page.
ISPHelpPage	This field displays the web site address of your ISP's online support web page.

Table 294 TR-106 Amendment 1: UserInterface (continued)

PARAMETER NAME	VALUE
ISPLogo	This field displays the base64 encoded character for your ISP's logo graphic. The graphic can be a GIF or JEPG file smaller than 4095 bytes.
ISPLogoSize	This field displays the size of the logo graphic file.
ISPMailServer	This field displays the address of your ISP's mail server.
ISPNewsServer	This field displays the address of your ISP's news server.
TextColor	This field displays the color (in six-character RGB number) of the text in the web configurator. For example, FFFFFF means white.
BackgroundColor	This field displays the color (in six-character RGB number) of the background in the web configurator. For example, FFFFFF means white.
ButtonColor	This field displays the color (in six-character RGB number) of the buttons in the web configurator. For example, FFFFFF means white.
ButtonTextColor	This field displays the color (in six-character RGB number) of the text on the buttons in the web configurator. For example, FFFFFF means white.
AutoUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen is **1** (see Section 26.3 on page 491). This field displays the address of the server the device is to check for new firmware. If a new firmware is available, the device is to update the firmware automatically.
UserUpdateServer	This field is applicable if the **UpgradesManaged** field in the **ManagementServer** screen is **0** (see Section 26.3 on page 491). This field displays the address of the server a user can check for new firmware updates available for the device.
AvailableLanguage	This field displays a comma-separated list of languages supported for the user interface.
CurrentLanguage	This field displays the language the device is using for the user interface.

27

LAN

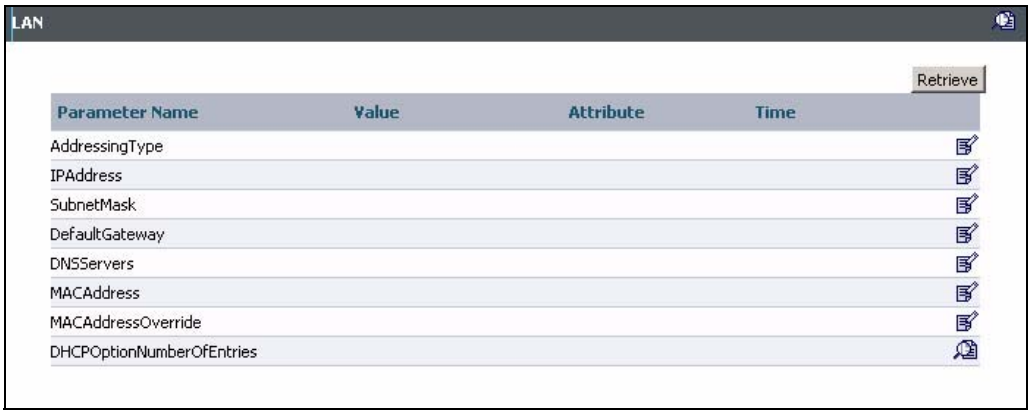
This chapter describes the LAN screens for the Device root object.

27.1 LAN

Display the **LAN** screen to view and configure LAN interface settings on the device.

Select a registered device in the Device List window and click **Device > LAN** to display the screen.

Figure 485 TR-106 Amendment 1: LAN



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 295 TR-106 Amendment 1: LAN

PARAMETER NAME	VALUE
AddressingType	This field displays how the device is to obtain an IP address for the LAN interface.
IPAddress	This field displays the IP address on the LAN interface.
SubnetMask	This field displays the subnet mask for the LAN interface.
DefaultGateway	This field displays the IP address of the default gateway device.
DNSServers	This field displays the comma-separated list of IP address(es) of the DNS server(s).
MACAddress	This field displays the MAC address on the LAN interface.

Table 295 TR-106 Amendment 1: LAN (continued)

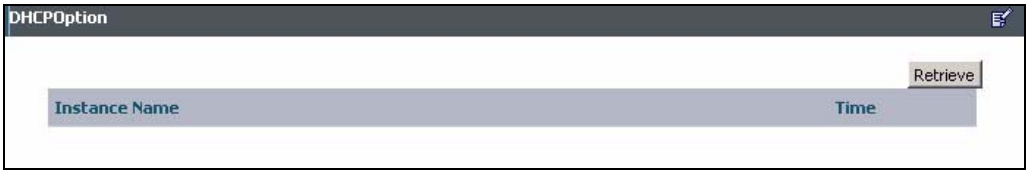
PARAMETER NAME	VALUE
MACAddressOverride	This field displays whether the device allows modification of the MAC address on the LAN interface.
DHCPOptionNumberOfEntries	This field displays the number of entries in the DHCP options table.

27.2 DHCP Options

Display the DHCPOptions screen to view the DHCP options table on the device. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Device** > **LAN** > **DHCPOptions** to display the screen.

Figure 486 TR-106 Amendment 1: LAN: DHCPOption

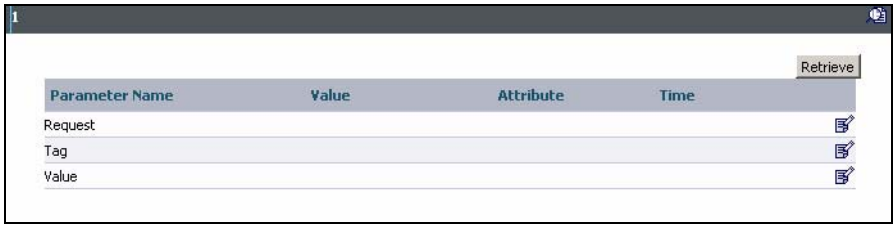


27.2.1 DHCP Options Details

Display the detailed **DHCPOption** screen to view or configure settings in the DHCP options table.

Select a registered device in the Device List window and click **Device** > **LAN** > **DHCPOption**. Click a number to display the screen.

Figure 487 TR-106 Amendment 1: LAN: DHCPOption: Details



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 296 TR-106 Amendment 1: LAN: DHCPOption: Details

PARAMETER NAME	VALUE
Request	This field displays whether this entry is a request to the DHCP server or a value to be sent by the DHCP client.

Table 296 TR-106 Amendment 1: LAN: DHCPOption: Details (continued)

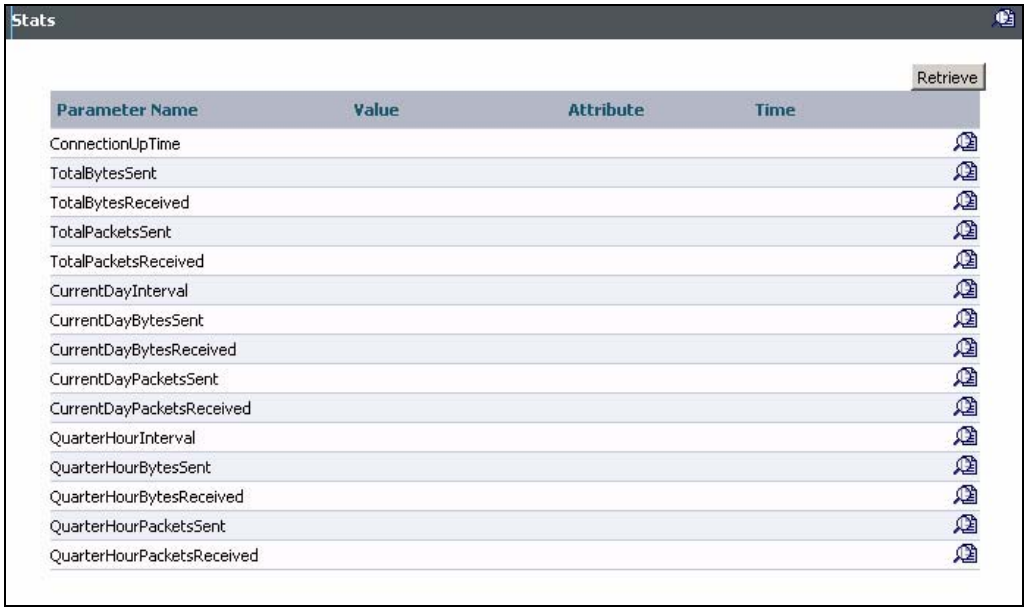
PARAMETER NAME	VALUE
Tag	This field displays the name of the DHCP option tag as defined in RFC 2132.
Value	This field displays the value the DHCP client is to send.

27.3 LAN Statistics

Display the **Stats** screen to view statistics for the default LAN interface.

Select a registered device in the Device List window and click **Device** > **LAN**. Click **Stats** to display the screen.

Figure 488 TR-106 Amendment 1: LAN: Stats



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 297 TR-106 Amendment 1: LAN: Stats

PARAMETER NAME	VALUE
ConnectionUpTime	This field displays the time the LAN interface has been up.
TotaleBytesSent	This field displays the total number of bytes transmitted on the LAN since the device was last restarted.
TotalBytesReceived	This field displays the total number of bytes received on the LAN since the device was last restarted.
TotalPacketsSent	This field displays the total number of packets transmitted on the LAN since the device was last restarted.
TotalPacketsReceived	This field displays the total number of packets received on the LAN since the device was last restarted.

Table 297 TR-106 Amendment 1: LAN: Stats (continued)

PARAMETER NAME	VALUE
CurrentDayInterval	This field displays the number of seconds since the beginning of the period used for collection of CurrentDay statistics.
CurrentDayBytesSent	This field displays the number of bytes transmitted on the LAN since the beginning of the current-day interval as specified by the CurrentDayInterval parameter.
CurrentDayBytesReceived	This field displays the number of bytes received on the LAN since the beginning of the current-day interval as specified by the CurrentDayInterval parameter.
CurrentDayPacketsSent	This field displays the number of packets transmitted on the LAN since the beginning of the current-day interval as specified by the CurrentDayInterval parameter.
CurrentDayPacketsReceived	This field displays the number of packets received on the LAN since the beginning of the current-day interval as specified by the CurrentDayInterval parameter.
QuarterHourInterval	This field displays the number of seconds since the beginning of the period used for collection of QuarterHour statistics.
QuarterHourBytesSent	This field displays the number of bytes transmitted on the LAN since the beginning of the quarter-hour interval as specified by the QuarterHourInterval parameter.
QuarterHourBytesReceived	This field displays the number of bytes received on the LAN since the beginning of the quarter-hour interval as specified by the QuarterHourInterval parameter.
QuarterHourPacketsSent	This field displays the number of packets transmitted on the LAN since the beginning of the quarter-hour interval as specified by the QuarterHourInterval parameter.
QuarterHourPacketsReceived	This field displays the number of packets received on the LAN since the beginning of the quarter-hour interval as specified by the QuarterHourInterval parameter.

27.4 IP Ping Diagnostics

Use the **IPPingDiagnostics** screen to view or configure IP Ping test settings.

Select a registered device in the Device List window and click **Device** > **LAN** > **IPPingDiagnostics** to display the screen.

Figure 489 TR-106 Amendment 1: LAN: IPPingDiagnostics

The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 298 TR-106 Amendment 1: LAN: DHCPOption: Details

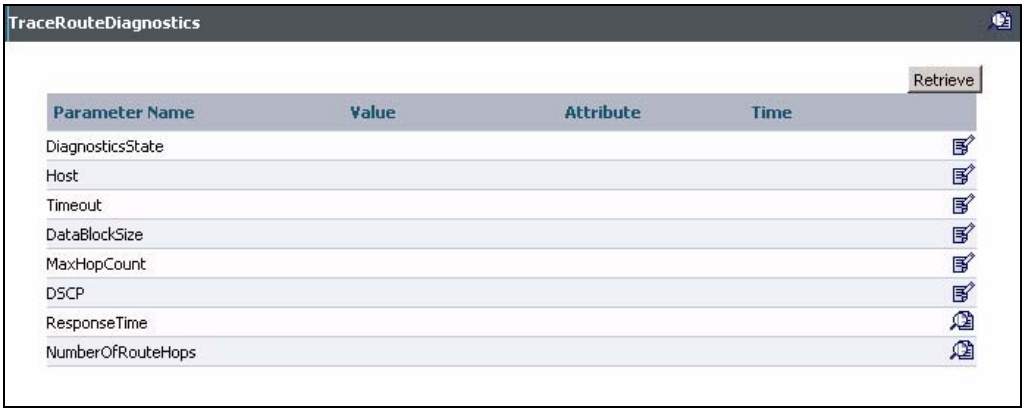
PARAMETER NAME	VALUE
DiagnosticsState	This field displays the availability of the diagnostics result.
Host	This field displays the name or the IP address of the host device to ping.
NumberOfRepetitions	This field displays the number of ping tests to perform before reporting the test result.
Timeout	This field displays the timeout (in milliseconds) for a ping test.
DataBlockSize	This field displays the size of the data block (in bytes) to send for each traceroute.
DSCP	This field displays the DiffServ Code Point (DSCP) value for the ping packets to send.
SuccessCount	This field displays the number of successful ping tests.
FailureCount	This field displays the number of unsuccessful ping tests.
AverageResponseTime	This field displays the average response time (in milliseconds) of all ping tests.
MinimumResponseTime	This field displays the minimum response time (in milliseconds) of all ping tests.
MaximumResponseTime	This field displays the maximum response time (in milliseconds) of all ping tests.

27.5 Traceroute Diagnostics

Use the **TraceRouteDiagnostics** screen to view or configure traceroute test settings.

Select a registered device in the Device List window and click **Device** > **LAN**. Click **TraceRouteDiagnostics**.

Figure 490 TR-106 Amendment 1: LAN: TraceRouteDiagnostics



The following table describes the labels in this screen. Refer to Section 11.2.4 on page 132 for other field descriptions.

Table 299 TR-106 Amendment 1: LAN: TraceRouteDiagnostics

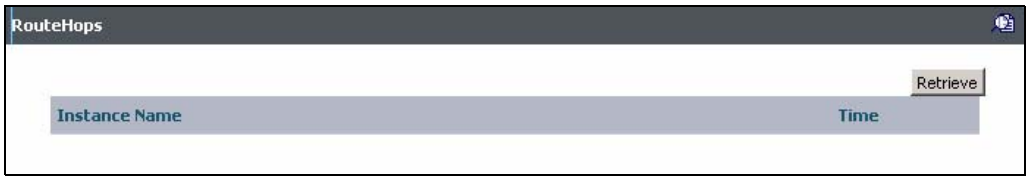
PARAMETER NAME	VALUE
DiagnosticsState	This field displays the availability of the diagnostics result.
Host	This field displays the name or the IP address of the host device to which to trace route.
Timeout	This field displays the timeout (in milliseconds) for a trace route test.
DataBlockSize	This field displays the size of the data block (in bytes) to send for each traceroute.
MaxHopCount	This field displays the maximum number of hops used in outgoing probe packets.
DSCP	This field displays the DiffServ Code Point (DSCP) value for the outgoing probe packets.
ResponseTime	This field displays the response time (in milliseconds) of the most recent traceroute test.
NumberOfRouteHops	This field displays the number of hops for the discovered route.

27.5.1 Route Hops

Display the **RouteHops** screen to view the hops along a discovered route. Refer to Section 11.2.4 on page 132 for other field descriptions.

Select a registered device in the Device List window and click **Device** > **LAN** > **TraceRouteDiagnostics** > **RouteHops** to display the screen.

Figure 491 TR-106 Amendment 1: LAN: TraceRouteDiagnostics: RouteHops



27.5.2 Route Hops Details

Display the detailed **RouteHops** screen to view the name or the IP address of a hop on a discovered route. Refer to Section 11.2.4 on page 132 for other field descriptions.

1. Select a registered device in the Device List window and click **Device** > **LAN**.
2. Click **TraceRouteDiagnostics**.
3. Click **RouteHops** and a number to display the screen.

Figure 492 TR-106 Amendment 1: LAN: TraceRouteDiagnostics: RouteHops: Details

PART X
File Manager

This part contains the following chapters.

- Device Firmware Maintenance (507)
- Vendor Configuration File (513)

28

Device Firmware Maintenance

This chapter describes the **Device Firmware** screens you use to manage the device firmware files on the download server and how to perform remote device firmware upgrade through the Vantage Access server.

28.1 Device Firmware Overview

The File Manager screens are available to manager accounts only.

To display the File Manager screens, log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.

You can update the firmware to one or more devices (of the same model) through the Vantage Access server. The firmware upgrade process can be automatic based on a pre-configured schedule or manually at any time.

To upgrade device firmware remotely via the Vantage Access server, do the following:

1. Use the **Management** screen to upload a device's firmware files to the download server.
2. Use the **Upgrade** screen to update the new device firmware file to the selected device(s). See Section 28.3 on page 510 for more information.
3. Use the **Scheduled Upgrade List** screen to view a list of scheduled firmware upgrade requests. See Section 28.3.2 on page 511 for more information.

28.2 Firmware Management

Use the **Firmware Management** screen to upload device firmware files to the download server. You can also use this screen to display the list of firmware files on the download server or delete a firmware file.

Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel. Then click **Device Firmware** > **Management** in the navigation panel. You can sort the entries in the table by clicking the headings.

Figure 493 File Manager: Device Firmware: Management

The following table describes the labels in this screen.

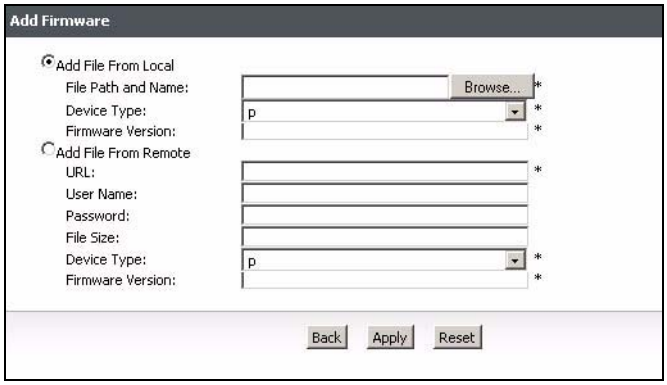
Table 300 File Manager: Device Firmware: Management

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the device firmware file from the download server. Click **Select All** to select all entries in this screen.
File Name	This field displays the descriptive firmware name for identification purposes.
Dev Type	This field displays the model name for which this firmware is intended.
SW Version	This field displays the device firmware version number.
Add	Click **Add** to save a firmware file.
Delete	Click **Delete** to remove the selected firmware file(s).

28.2.1 Adding a New Device Firmware

The **Add Firmware** screen allows you to add a new device firmware to the server (specified in the **Download Server** screen).

Figure 494 File Manager: Device Firmware: Management: Add



28.2.1.1 Adding Firmware from a Local Source

Take the following steps to add firmware from a local souce, such as you management computer.

1. Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2. Click **Device Firmware** > **Firmware Management** and click **Add** to display the **Add Firmware** screen.

3 Select **Add File From Local**.
4 Specify the path and name of the device firmware file in the **File Path and Name** field, or click **Browse** to locate it.
5 In the **Device Type** field, select the device model for the firmware from the drop-down list, or type the model name in the field (up to 64 characters using “0-9”, “a-z”, “A-Z”, “_”, “-”, “(”, “)”, “.”, or spaces).
6 In the **Firmware Version** field, enter a descriptive name for the firmware file. You can enter up to 250 characters (using “0-9”, “a-z”, “A-Z”, “_”, “-”, “(”, “)”, “.”, or spaces).
7 Click **Apply** to save the device firmware file to the download server.

28.2.1.2 Adding Firmware From a Remote Source

Take the following steps to add firmware from a URL.

1 Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2 Click **Device Firmware > Firmware Management** and click **Add** to display the **Add Firmware** screen.
3 Select **Add File From Remote**.
4 Specify the firmware’s **URL**.
5 Specify a server **User Name** and **Password**, if required.
6 Specify a **File Size**, if necessary.
7 In the **Device Type** field, select the device model for the firmware from the drop-down list, or type the model name in the field (up to 64 characters using “0-9”, “a-z”, “A-Z”, “_”, “-”, “(”, “)”, “.”, or spaces).
8 In the **Firmware Version** field, enter a descriptive name for the firmware file. You can enter up to 250 characters (using “0-9”, “a-z”, “A-Z”, “_”, “-”, “(”, “)”, “.”, or spaces).
9 Click **Apply** to save the device firmware file to the download server.

28.2.2 Deleting a Device Firmware File

You cannot delete a firmware file that is currently being used to perform firmware upgrade on a device.

Follow the steps below to delete a device firmware from the server (specified in the **Download Server** screen).

1 Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2 Click **Device Firmware > Management** and select one or more than one firmware files in the same screen.
3 Click **Delete**.
4 A pop-up screen displays. Click **OK** to start the file removal process.

Figure 495 File Manager: Device Firmware: Firmware Management: Delete

28.3 Firmware Upgrade

You must first upload and store new device firmware files on the download server using the **Firmware Management** screen. Refer to Chapter 28 on page 507.

After you have stored device firmware files on the download server, you can perform remote firmware upgrade on one or a group of managed device (of the same type for a registered device) in the **Firmware Upgrade** screen.

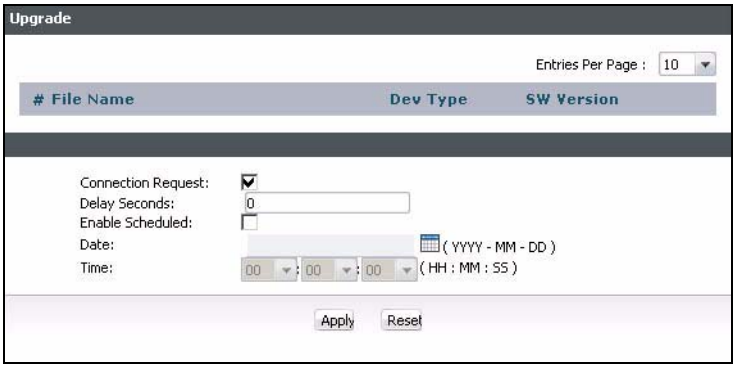
You can use this screen to manually update the device firmware or set a schedule for Vantage Access to automatically update the firmware.

28.3.1 Manual Firmware Upgrade

Follow the steps below to manually upgrade firmware to one or more device(s) through Vantage Access.

1. Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2. Select a device in the Device List window. To upgrade firmware on a group of devices, select a device group folder in the Topology panel.
3. Click **Device Firmware** > **Upgrade** to display the configuration screen.

Figure 496 File Manager: Device Firmware: Firmware Upgrade



4. In the table, select a firmware file that you want to update to the device(s). Refer to Table 300 on page 508 for field descriptions.
5. If you want to request a connection to the device before performing the upgrade, select **Connection Request**.

This feature is not available when you are upgrading a group's firmware.

6 If you want to wait a short time before performing the firmware upgrade, enter the number of seconds to wait in the **Delay Seconds** field.
7 Click **Apply** to start the firmware upgrade process. Click **Reset** to start configuring this screen again.

If the device(s) is on the network, Vantage Access sends the firmware file to the device(s) immediately.

If the device(s) is off the network, Vantage Access saves the firmware upgrade request. Once the device(s) is available, the request is immediately carried out.

You can view a list of manual firmware requests in the **Device Firmware** > **Upgrade List** screen.

28.3.2 Scheduled Firmware Upgrade

Follow the steps below to manually upgrade firmware to one or more devices through Vantage Access.

1 Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2 Select a device in the Device List window. To upgrade firmware on a group of devices, select a device group folder in the Topology panel.
3 Click **Device Firmware** > **Upgrade** to display the configuration screen (see Figure 496 on page 510).
4 In **Select Firmware**, select a firmware file that you want to update to the device(s). Refer to Table 300 on page 508 for field descriptions.
5 Select **Enable Scheduled** to configure a schedule for the firmware upgrade.
6 In the **Date** field, specify the date on which the upgrade is to take place. Enter the date in the format yyy-mm-dd. Alternatively, click the calendar icon ( ) to pick a date from the calendar.
7 In the **Time** field, specify the time at which the upgrade is to take place. Enter the time in the format hh:mm:ss.
8 Click **Apply** to save the settings or click **Reset** to start configuring this screen again.
You can view a list of scheduled firmware upgrade settings in the **Upgrade List** screen.

28.4 Firmware Upgrade Request Lists

After you have set the **Firmware Upgrade** screen, you can view the list of manual or scheduled firmware upgrade requests in the **Upgrade List** screen.

28.4.1 Upgrade List

You can see the list of configured firmware upgrades in the **Upgrade List** screen.

1. Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2. Select a device in the Device List panel. To view pending firmware requests for a group of devices, select a device group folder in the Topology panel.
3. Click **Device Firmware** > **Upgrade List** to display the screen.

Figure 497 Device Firmware: Device Firmware: Scheduled Upgrade List

The following table describes the labels in this screen.

Table 301 File Manager: Device Firmware: Scheduled Upgrade List

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the entry. Choose **Select All** to select all entries.
Dev Name	This field displays the descriptive name of the device.
OUI-SN	This field displays the OUI and serial number of the device.
Dev Type	This field displays the model name for which this firmware is intended.
SW Version	This field displays the version of the firmware.
Scheduled Time	This field displays the time Vantage Access will perform remote firmware upgrade on the device. The time in the format yyyy-mm-ddThh:mm:ss. For example, 2006-09-20T05:30:00 means 5:30 AM on September 20th in 2006.
Delete	Click **Delete** to remove the selected firmware upgrade schedule(s) only before the device starts the firmware upgrade. You can check the status and result in the **History** screen.

29

Vendor Configuration File

This chapter describes the **Vendor Config File** screens which you use to manage device configuration files on the file server or restore device configuration files to managed devices.

29.1 Vendor Configuration File Overview

The configuration file (or romfile) on a device contains the device settings. Changes made through the device web configurator, SMT or the CLI are saved in the configuration file. You can back up the configuration file from a device or restore it back to the device.

To display the File Manager screens, log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.

You can restore or update the configuration file to one or more devices (of the same model) through the Vantage Access server.

29.2 Available Device Configuration File

Use the **Management** screens to view a list of device configuration files on the file server. When you back up configuration from a managed device, an entry is created in this screen. You can click a link to download the device configuration file from the file server to your computer. You can also use this screen to upload a configuration file to be restored to the devices.

Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel. Then click **Vendor Config File** > **Management** to display the screen.

Figure 498 File Manager: Vendor Config File: Management

The following table describes the labels in this screen.

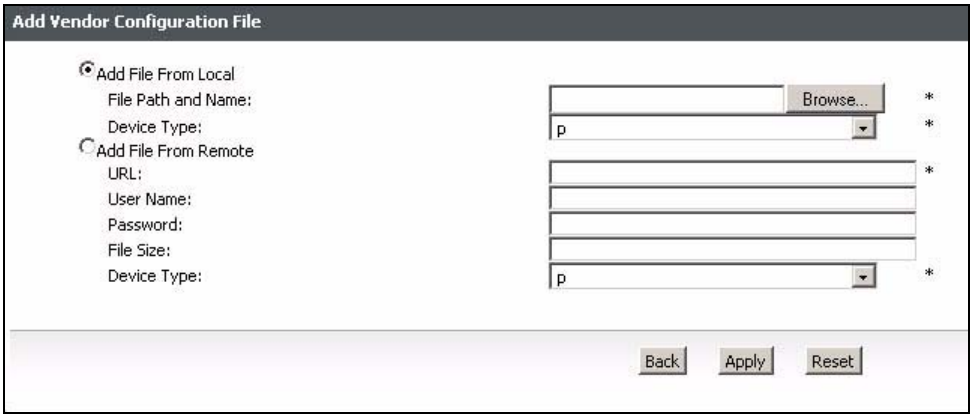
Table 302 File Manager: Vendor Config File: Management

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the device configuration file from the file server. Click **Select All** to select all entries in this screen.
File Name	This field displays the descriptive name of a file. Click on a name to download the file to your computer.
Dev Type	This field displays the model name for which this file is intended.
File Added Time	This field displays the time the file was created.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Add	Click **Add** to upload a device configuration file to the file server.
Delete	Click **Delete** to remove the selected file(s).

29.2.1 Adding a Vendor Configuration File

Use the **Add Vendor Configuration File** screen to upload a device configuration file to the file server. You can later configure Vantage Access to restore this configuration file to the device(s) you specify.

Figure 499 File Manager: Vendor Config File: Management: Add



29.2.1.1 Adding a Vendor Configuration File From a Local Source

Take the following steps to add a vendor config file from a local source, such as your management computer.

1 Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.

2 Click **Vendor Config File** > **Management** in the navigation panel.
3 In the **Management** screen, click **Add**.
4 The **Add Vendor Config File** screen displays. Select **Add File From Local**.
5 Specify the location and name of the configuration file in the **File Path and Name** field or click **Browse** to locate it.
6 Specify the device type for the configuration file.
7 Click **Apply** to start the file transfer process. After the file transfer is complete, a new entry displays in the **Management** screen.

29.2.1.2 Adding a Vendor Configuration File From a Remote Source

Take the following steps to add a vendor config file from a URL.

1 Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2 Click **Vendor Config File** > **Management** in the navigation panel.
3 In the **Management** screen, click **Add**.
4 The **Add Vendor Config File** screen displays. Select **Add File From Remote**.
5 Specify the file's **URL**.
6 Specify a server **User Name** and **Password**, if required.
7 Specify a **File Size**, if necessary.
8 In the **Device Type** field, select the device model for the file from the drop-down list, or type the model name in the field (up to 64 characters using "0-9", "a-z", "A-Z", "_", "-", "(", ")", ".", or spaces).
9 Click **Apply** to save the device firmware file to the download server.

29.2.2 Downloading a Configuration File

Follow the steps below to download a file from the download server to your computer.

1 Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2 Click **Vendor Config File** > **Management** in the navigation panel.
3 In the **Management** screen, click on a file you want to download.
4 A screen displays. Click **Save**.
5 Specify the location and name for the file and click **Save** again.
6 After the file transfer process is complete, click **OK**.

29.2.3 Deleting a Configuration File

Follow the steps below to delete a device configuration file from the download server.

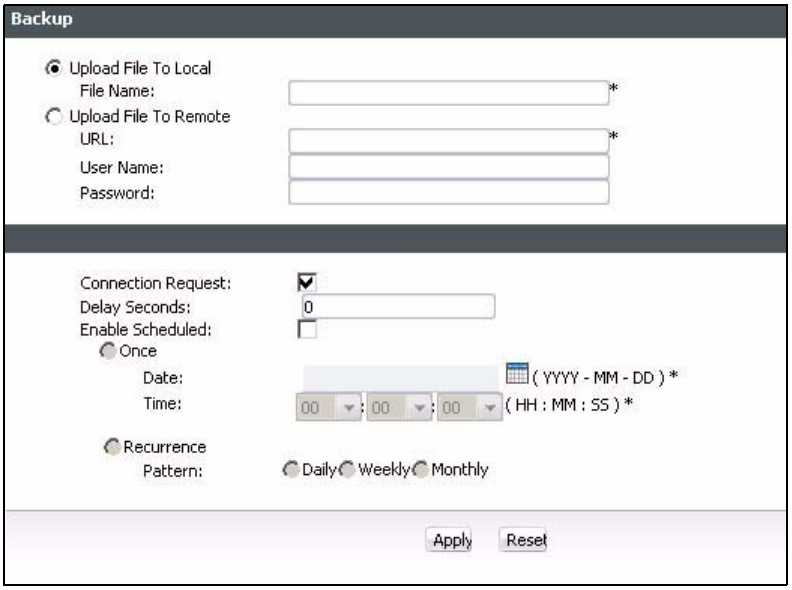
1 Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2 Click **Vendor Config File** > **Management** in the navigation panel.
3 In the **Management** screen, select the file(s) you want to remove from the download server and click **Delete**
4 A screen displays. Click **OK** to delete the selected file(s). Otherwise click **Cancel** and close the screen.

29.3 Backing up Device Configuration Files

Use the **Backup** screen to back up the current configuration of a device to the download server. After you have backed up a configuration file, an entry is created in the **Backup** screen.

1. Log into Vantage Access using a manager account and click the **File Manager** icon in the control panel.
2. Select a device in the Device List window.
3. Click **Vendor Config File** > **Backup**.
4. A screen displays as shown.

Figure 500 File Manager: Vendor Config File: Backup



The following table describes the labels in this screen.

Table 303 File Manager: Vendor Config File: Backup

LABEL	DESCRIPTION
Upload File To Local	Select this to upload the vendor config file to the download server.
File Name	Enter the name of the file you want to upload.
Upload File To Remote	Select this to upload the vendor config file to a URL.
URL	Enter the URL to which you want to upload the file.
User Name	Enter a server user name, if required by the upload server.
Password	Enter a server password, if required by the upload server.
Connection Request	Select this if you want Vantage Access to send a connection request prior to uploading the file. **Note: This feature is not available when you are upgrading a group's files.**
Delay Seconds	If you want Vantage Access to wait a short period before uploading the file, enter the number of seconds to wait here.
Enable Scheduled	Select this to have Vantage Access upload the file at a point in the future, or at a regular interval.

Table 303 File Manager: Vendor Config File: Backup

LABEL	DESCRIPTION
Once	Select this to upload the file only once.
Date	Enter the date on which you want to upload the file in the formate yyy-mm-dd. Alternatively, click the calendar icon to select a day from the calendar.
Time	Enter the time at which you want Vantage Access to upload the file in the format hh:mm:ss.
Recurrence	Select this to upload the file at a regular interval.
Pattern	Select the frequency (**Daily**, **Weekly** or **Monthly**) with which you want the file to be uploaded.
Apply	Click this to save your settings and begin the file transfer process (if configured). **Note: If a file with the same name is already on the download server, a warning screen displays. Click OK or Cancel to close the warning screen. Only one backup configuration file for a device may exist on the download server.**
Reset	Click this to return the fields in this screen to their defaults.

29.4 Backup Configuration File List

The **Backup List** screen displays a list of backup configuration files which are configured to back up in the future.

Follow the steps below to display the screen.

1. Log into the Vantage Access server using a manager account and click the **File Manager** icon in the control panel.
2. Select a device in the Device List window.
3. Click **Vendor Config File** > **Backup List** to display the screen.

Figure 501 File Manager: Vendor Config File: Backup List

The following table describes the labels in this screen.

Table 304 File Manager: Vendor Config File: Backup List

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the device configuration file from the download server. Click **Select All** to select all entries in this screen.

Table 304 File Manager: Vendor Config File: Backup List (continued)

LABEL	DESCRIPTION
Dev Name	This field displays the descriptive name of the device.
OUI-SN	This field displays the OUI and serial number of the device.
Device Type	This field displays the model name for which this file is intended.
File Name	This field displays the name of the backup configuration file.
Scheduled Time	This field displays the time at which the upload will take place.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Delete	Click **Delete** to remove the selected file(s).

29.5 Restoring Device Configuration

Restoring configuration replaces current configuration on a device.

You can use the **Restore** screen to restore configuration for a device or a group of devices. You must first use the **Management** screen (see Figure 498 on page 513) to upload a device configuration file to the download server.

Follow the steps below to restore configuration to device(s).

1. Log into the Vantage Access server using a manager account and click the **File Manager** icon in the control panel.
2. Select a device or a device pool in the Device List window.
3. Click **Vendor Config File** > **Restore** to display the screen.

Figure 502 File Manager: Vendor Config File: Restore (for a device)

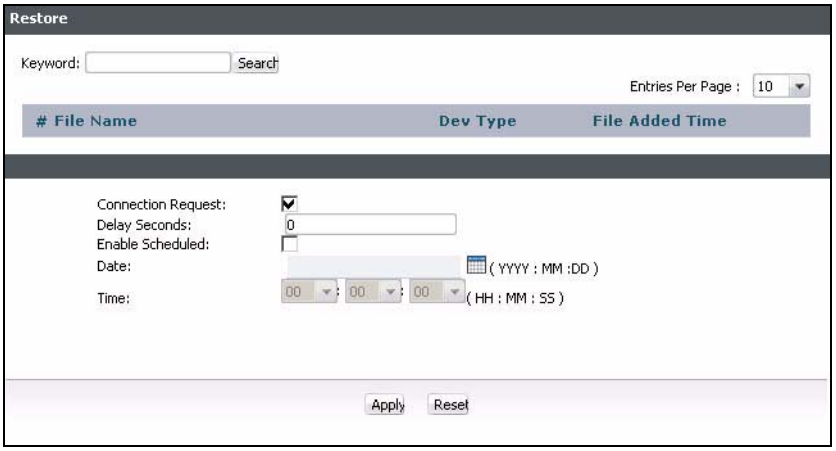
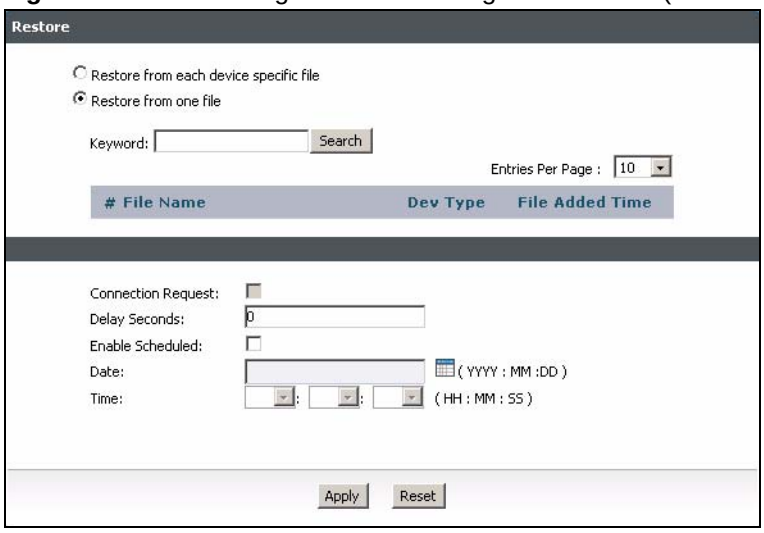


Figure 503 File Manager: Vendor Config File: Restore (for a device pool)



The following table describes the labels in this screen.

Table 305 File Manager: Vendor Config File: Restore

LABEL	DESCRIPTION
Restore from each device specific file	This field is available if you select a device pool. Select this if you want to restore the corresponding configuration file to each device in the device pool.
Restore from one file	This field is available if you select a device pool. Select this if you want to restore a single configuration file to all devices in the device pool.
Keyword	Enter a search term and click **Search** to see all matching files.
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the device configuration file from the download server. Click **Select All** to select all entries in this screen.
File Name	This field displays the name of the backup configuration file.
Dev Type	This field displays the model name for which this file is intended.

Table 305 File Manager: Vendor Config File: Restore

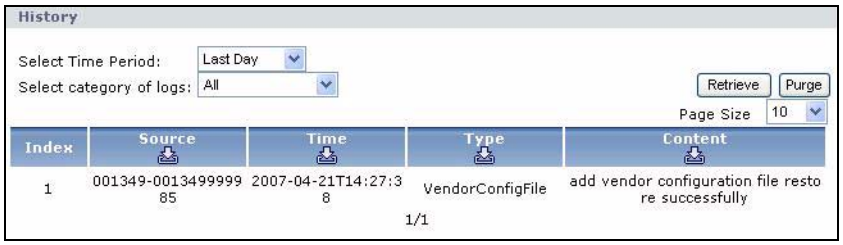
LABEL	DESCRIPTION
File Added Time	This field displays the time at which the file was created on the download server.
Connection Request	This field is not selectable if you select a device pool. Select this if you want Vantage Access to send a connection request prior to restoring the file. **Note: This feature is not available when you are restoring a group's files.**
Delay Seconds	If you want Vantage Access to wait a short period before restoring the file, enter the number of seconds to wait here.
Enable Scheduled	Select this to have Vantage Access restore the file at a point in the future, or at a regular interval.
Date	Enter the date on which you want to restore the file in the formate yyy-mm-dd. Alternatively, click the calendar icon to select a day from the calendar.
Time	Enter the time at which you want Vantage Access to restore the file in the format hh:mm:ss.
Apply	Click this to save your settings and begin the file transfer process (if configured).
Reset	Click this to return the fields in this screen to their defaults.

29.5.1 Verifying Configuration Restore

After you have set Vantage Access to restore a configuration file to the selected device, a configuration restore request is creates in the Restore List screen. Vantage Access will automatically perform this action during the next device synchronization process.

To check that the configuration restore is successful, see the log entry in the **History** screen (click the **Provision Manager** icon and **History**).

Figure 504 File Manager: Vendor Config File: Verify Restore Example



29.6 Configuration Restore Request List

After you have selected and applied to restore configuration to a device in the **Restore** screen, you can check the request status in the **Restore List** screen. Once Vantage Access performs the configuration restore action, the request entry is automatically removed from this screen and a log entry is created in the **History** screen.

Follow the steps below to display the **Restore List** screen.

1. Log into the Vantage Access server using a manager account and click the **File Manager** icon in the control panel.
2. Select a device in the Device List window.
3. Click **Vendor Config File** > **Restore List** to display the screen.

Figure 505 File Manager: Vendor Config File: Restore List

The following table describes the labels in this screen.

Table 306 File Manager: Vendor Config File: Restore List

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the request entry from the download server. Click **Select All** to select all entries in this screen.
Dev Name	This field displays the descriptive name of a device.
OUI-SN	This field displays the OUI and serial number of the device.
Device Type	This field displays the model name for which this file is intended.
File Name	This field displays the name of the restore configuration file.
Scheduled Time	This field displays the time at which the file restore is configured to take place.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that screen.
Delete	Click **Delete** to remove the selected file(s).

PART XI
System Manager

This part contains the following chapters.

- Account Management (525)
- Download Server (533)
- System Maintenance (535)
- License (539)
- System Setting (543)

30

Account Management

This chapter describes the **User Management** screens you use to configure Vantage Access login accounts.

30.1 Types of Accounts

Vantage Access provides three account types with different privilege levels. The web configurator screens vary depending on which account you use to log in. The following table describes and shows the default user name and password for the different accounts.

Table 307 Types of Accounts

TYPE	PRIVILEGE	DEFAULT SETTINGS
Root	• Create manager and guest accounts. • Associate/un-associate devices to manager accounts. • Import device information to Vantage Access. • Log file management. • General Vantage Access setup (such as download server settings). • Log out other users.	User name: root Password: root
manager	• View and configure associated devices. • Vendor configuration file management. • Device firmware upgrade. • Import device information to Vantage Access.	No default account.
Call Center	• View information of devices assigned to the manager or the root/manager who created this account. • Perform simple configuration tasks.	No default account.

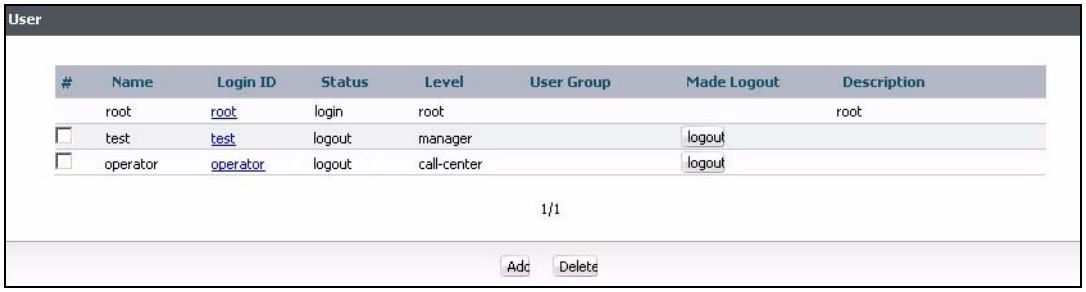
30.2 User Account Management

You can view a list of accounts in the **User Management** > **User** screen.

The root user can view and edit all accounts created on Vantage Access. Manager accounts can only view and edit their own accounts.

Log into Vantage Access as root or a manager and click the System Manager icon in the control panel. Then click **User Management** > **User** in the navigation panel to display the screen.

Figure 506 System Manager: User Management


User
Name Login ID Status Level User Group Made Logout Description
root root login root root
test test logout manager logout
operator operator logout call-center logout
1/1
Add Delete

The following table describes the labels in this screen.

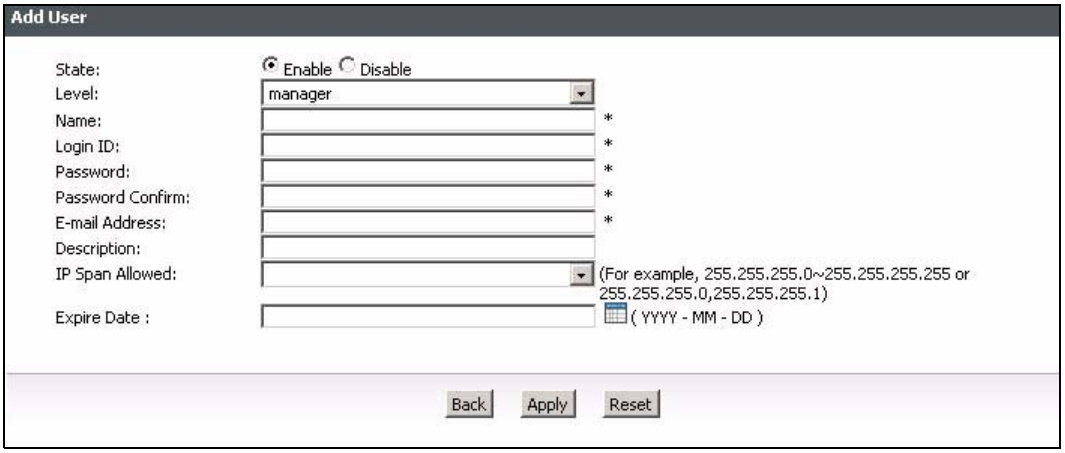
Table 308 System Manager: User Management

LABEL	DESCRIPTION
#	Select this box and click **Delete** to remove the account.
Name	This field displays the name of the user.
Login ID	This field displays the account user name. Click the link to edit the account information.
Status	This field displays whether the account is currently in use (**login**) or not (**logout**).
Level	This field displays the type of the account.
User Group	If the user is a member of a user group, the name of the group displays here.
Made Logout	This field is available only to root. If a user is logged in, click this to forcibly log the user out.
Description	This field displays additional information about the account.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Add	Click **Add** to create an account (available for root only).
Delete	Click **Delete** to remove the selected account(s). **Note: You cannot delete an account that is currently in use.**

30.3 Adding a User Account

To create an account, click **Add** in the **User Management** screen. Fields with asterisks “*” are required information and cannot be left blank.

Figure 507 System Manager: User Management: Add User



The following table describes the labels in this screen.

Table 309 System Manager: User Management: Add User

LABEL	DESCRIPTION
State	Select **Enable** to activate this account. Select **Disable** to deactivate this account. In this case, you cannot log in using this account.
Level	Specify the account type. Select **manager** to create a manager account. Select **call-center** to create an account for your call center operation.
Name	Enter the name of the person using this account. You can enter up to 250 characters (0-9, A-Z, a-z, -, _ with no spaces).
Login ID	Specify the user name for this manager account. You can enter up to 32 characters (0-9, A-Z, a-z, -, _ with no spaces).
Password	Specify the password associated to this account. You can enter up to 12 characters (0-9, A-Z, a-z, -, _ with no spaces). The characters are displayed as asterisks “*” in this field.
Password Confirm	Specify the login password again for confirmation.
Email Address	Specify the e-mail address (up to 250 characters) of the person using this manager account. You must enter a valid e-mail address in the format accountName@domain.com
Description	Enter additional information about this account. You can enter up to 250 characters (0-9, A-Z, a-z, -, _ and spaces are allowed).
IP Span Allowed	If you want to restrict the IP address from which this user may log in, enter the range of allowed IP addresses in this field. If you do not want to place a limit, leave this field blank.
Expire Date	Enter the date on which this user account will be disabled in yyyy-mm-dd format. Alternatively, click the calendar icon to select the date from the calendar.
Back	Click this to return to the previous screen.
Apply	Click **Apply** to save the settings and return to the main **User Management** screen.
Reset	Click **Reset** to start configuring this screen again.

30.4 Editing Account Information

You can use the **Update User** screen to change the password or contact information of an account.

You cannot change the account settings when a user is currently logged in using the account.

1. Log into the web configuration as root and click the **System Manager** icon in the control panel.
2. Click **User Management** > **User** and click the **Login ID** link of an account not currently in use. The **Update User** screen displays.
3. Change the information in the applicable fields. Refer to Table 309 on page 527 for field descriptions.

30.5 Deleting an Account

The following lists the rules for deleting accounts from Vantage Access.

- The root account cannot be deleted.
- A root user can delete any account (except root).
- You cannot delete an account that is currently used to log into Vantage Access.

Follow the steps below to remove an account from Vantage Access.

1. Log into the web configurator as root or manager and click the **System Manager** icon in the control panel.
2. Click **User Management** > **User** in the navigation panel.
3. Select one or more accounts and click **Delete**.
4. A pop-up screen displays. Click **OK** to remove the account. Otherwise click **Cancel**.

Figure 508 Administration: Management: Delete Account Prompt

Vantage Access automatically removes the firmware file(s) and the vendor configuration file(s) associated to a deleted user account.

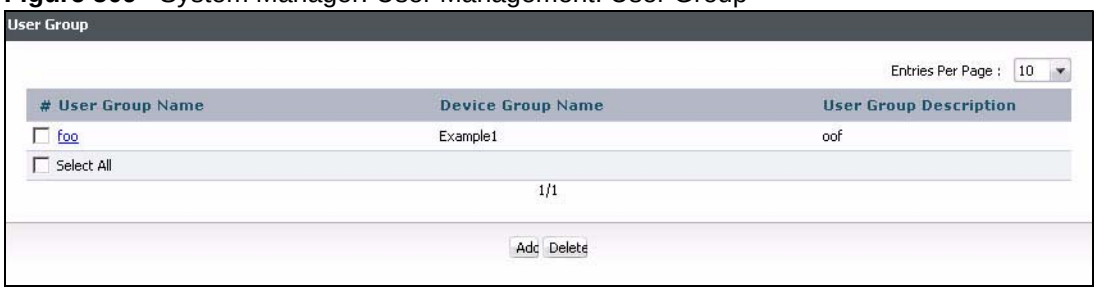
30.6 User Groups

This section shows you how to configure user groups. User groups link users and device groups. If you want to associate a manager account with a device group, you must associate the user with a user group. Use this screen to set up user groups and assign users to them.

To edit an existing user group, click its name in this screen. The screen that displays is the same as the Add User Group screen.

Click **System Manager** > **User Management** > **User Group**. The following screen displays.

Figure 509 System Manager: User Management: User Group



The following table describes the labels in this screen.

Table 310 System Manager: User Management: User Group

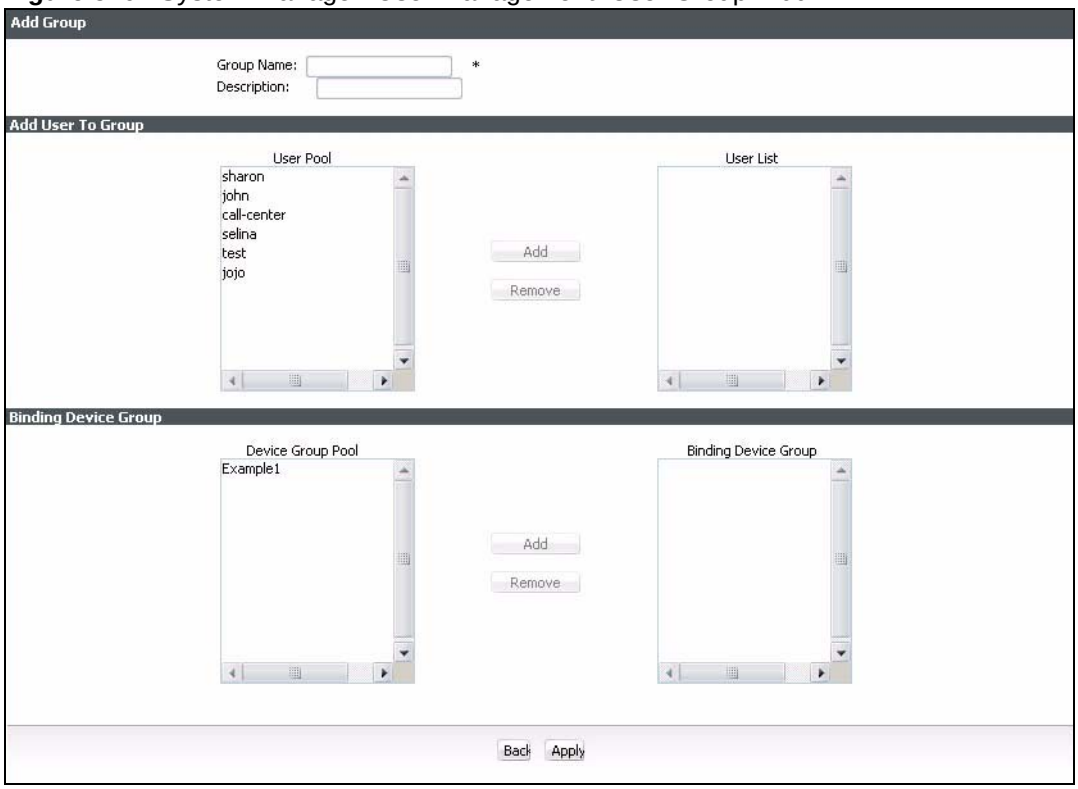
LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to delete the user group. Click **Select All** to select all entries in this screen.
User Group Name	This displays the name of the user group. **Note: Click the name to edit the group.**
Device Group Name	This displays the name of any decvice group associated with this user group.
User Group Description	This displays addditional information about the user group.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Add	Click **Add** to configure a new user group.
Delete	Click **Delete** to remove the selected user group(s).

30.6.1 Add or Edit User Group

Use this screen to configure a new user group, edit an existing group, and associate users and device groups.

Click **System Manager** > **User Management** > **User Group** > **Add**. The following screen displays.

Figure 510 System Manager: User Management: User Group: Add



The following table describes the labels in this screen.

Table 311 System Manager: User Management: User Group: Add

LABEL	DESCRIPTION
Group Name	Enter a name for this user group
Description	Enter additional information about this user group, if required.
Add User to Group	
User Pool	This is the list of available users who are not already part of the user group.
User List	This is the list of users who are already part of this user group.
Add	Select a user in the **User Pool** panel and click this to add the user to the **User List** panel.
Remove	Select a user in the **User List** panel and click this to add the user to the **User Pool** panel.
Binding Device Group	
Device Group Pool	This is the list of available device groups that are not already associated with this user group.
Binding Device Group	This is the list of device groups that are already associated with this user group.

Table 311 System Manager: User Management: User Group: Add

LABEL	DESCRIPTION
Add	Select a device group in the **Device Group Pool** panel and click this to add the device group to the **Binding Device Group** list.
Remove	Select a device group in the **Binding Device Group** panel and click this to add it to the **Device Group Pool** panel.
Back	Click this to return to the previous screen.
Apply	Click this to save your changes in this screen and return to the **User Group** screen.

30.7 Common Settings

Use this screen to configure password settings that apply to all Vantage Access users.

Click **System Manager** > **User Management** > **Common Setting**. The following screen displays.

Figure 511 System Manager: User Management: Common Setting

The following table describes the labels in this screen.

Table 312 System Manager: User Management: Common Setting

LABEL	DESCRIPTION
Max wrong password retries allowed	Enter the number of times a user may enter an incorrect password before Vantage Access takes the action you configure in the **After allowed max retries reached** field.
After allowed max retries reached	Select the action you want Vantage Access to take if a user exceeds the number of incorrect password entries you specify in the **Max wrong password retries allowed** field. If you select **Disable the user**, the user cannot log in until you reactivate the account. If you select **Allow retry after**, enter the number of minutes after which the user may try to log in again.
Password expires	If you want to require users to change their passwords after a certain length of time, select **Expires after** and enter the number of **days** after which a user must change the password.
Apply	Click this to save your changes to this screen.
Reset	Click this to return the fields in this screen to their last-saved values.

31

Download Server

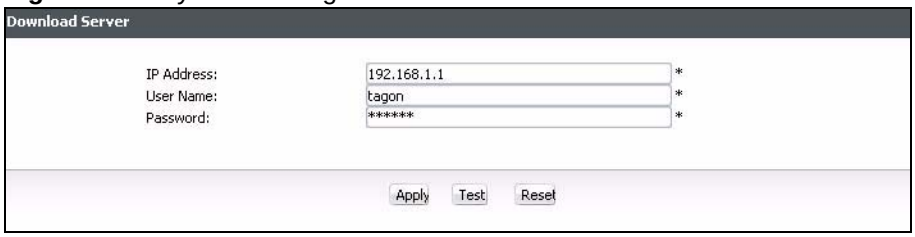
This chapter describes the **System Manager** > **Download Server** screen.

31.1 The Download Server Screen

The download server is the location in which all firmware files, vendor configuration files and maintenance files are stored. You must configure the download server before you can store, upload or download any such files (unless you do so to a local computer).

Click **System Manager** > **Download Server**. The following screen displays.

Figure 512 System Manager: Download Server



The following table describes the labels in this screen.

Table 313 System Manager: Download Server

LABEL	DESCRIPTION
IP Address	Enter the download server's IP address and port number.
User Name	Enter the user name you use to access the server, if required (maximum 31 characters).
Password	Enter the password associated with the above **User Name** (maximum 31 characters).
Apply	Click this to save the configuration changes you made in this screen.
Test	Click this to test the connection to the download server.
Reset	Click this to return the fields in this screen to their last-saved values.

32

System Maintenance

This chapter discusses the **System Manager > System Maintenance** screens. These screens allow you to manage, backup and restore Vantage Access system configuration files.

32.1 The System Maintenance Management Screen

This screen contains details of the backup system configuration files stored on the download server and the backup of Vantage Access's database. You can also delete the files.

Click **System Manager > System Maintenance > Management**. The following screen displays.

Figure 513 System Manager: System Maintenance: Management

The following table describes the labels in this screen.

Table 314 System Manager: System Maintenance: Management

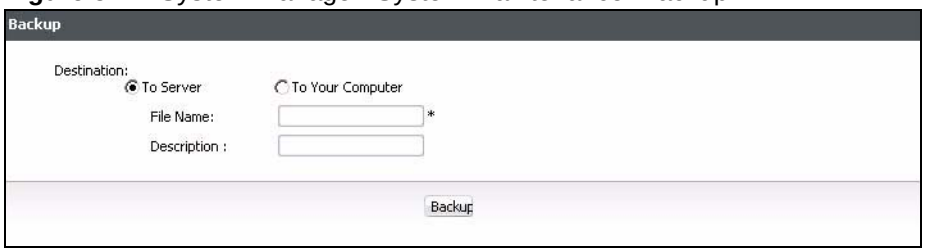
LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the system configuration files from the download server. Click **Select All** to select all entries in this screen.
Name	This displays the name of the system configuration file.
Description	This displays addition information about the system configuration file.
Backup Time	This displays the time at which the backup system configuration file was stored.
Delete	Click this to delete the selected backup system configuration file or files.

32.2 The System Maintenance Backup Screen

Use this screen to save Vantage Access's current system configuration to your local computer or the download server as a .zip file.

Click **System Manager** > **System Maintenance** > **Backup**. The following screen displays.

Figure 514 System Manager: System Maintenance: Backup



The following table describes the labels in this screen.

Table 315 System Manager: System Maintenance: Backup

LABEL	DESCRIPTION
Destination	Select **To Server** to save Vantage Access's current configuration to the download server. Select **To Your Computer** to save Vantage Access's current configuration to your computer or a network drive.
File Name	Enter a filename for this configuration file.
Description	Enter some descriptive information about this configuration file that will help you identify it in future.
Backup	Click this to save the configuration file.

32.3 The System Maintenance Restore Screen

Use this screen to upload Vantage Access's system configuration from a previously-saved .zip file. The .zip file may be located on your computer, a network drive, or the download server.

Click **System Manager** > **System Maintenance** > **Restore**. The following screen displays.

Figure 515 System Manager: System Maintenance: Restore

The following table describes the labels in this screen.

Table 316 System Manager: System Maintenance: Restore

LABEL	DESCRIPTION
Destination	Select **From Server** to restore Vantage Access's configuration from a file saved on the download server. When you use this option, select a **File Name** from the drop-down list box and click **Restore** to begin uploading the configuration. Select **From Your Computer** to restore Vantage Access's configuration from a file saved on your computer or a network drive. When you use this option, enter the configuration file's **File Path and Name**, or click **Choose...** to locate the file.
Restore	Click this to upload the specified configuration file. **Note: Any configuration changes you made since the configuration file was saved will be lost.** When the configuration file is successfully restored, Vantage Access restarts. Log back in to continue configuring Vantage Access.

33

License

This chapter discusses the **System Maintenance** > **License** screen.

33.1 License Overview

The license number on the included license card allows you to use Vantage Access to manage a limited number of devices. To manage more devices using Vantage Access, you need to purchase a standard license. Once you have upgraded to the standard version, you can enjoy free product updates and customer support from ZyXEL.

33.2 The License Screen

This screen displays information about your Vantage Access license, and the number of devices you may manage under the current license.

Click **System Manager** > **System Maintenance** > **License**. The following screen displays.

Figure 516 System Manager: System Maintenance: License (Trial)

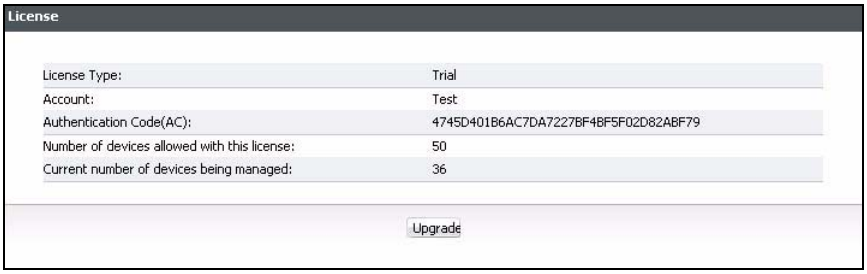
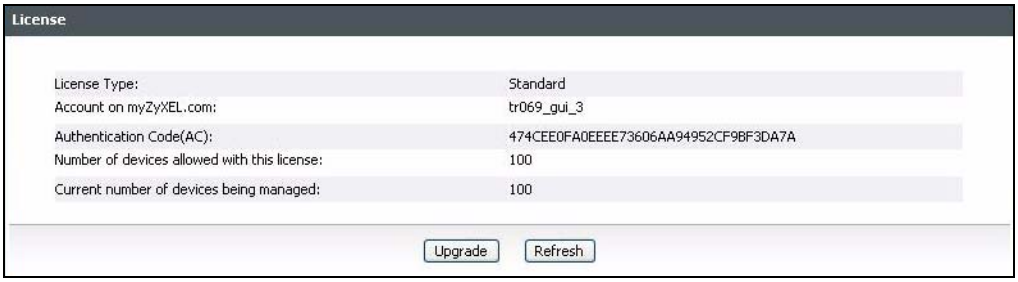


Figure 517 System Manager: System Maintenance: License (Standard)



The following table describes the labels in this screen.

Table 317 System Manager: System Maintenance: License

LABEL	DESCRIPTION
License Type	This field displays the type of license (**Trial** or **Standard**).
Account	This field displays the myzyxel.com account user name.
Authentication Code (AC)	This field displays the authentication code.
Number of devices allowed with this license	This field displays the number of devices Vantage Access can manage with this license number.
Current number of devices being managed	This field displays the number of devices Vantage Access is currently managing.
Upgrade	Click **Upgrade** to display the **Upgrade License** screen you use to upgrade the Vantage Access license.
Refresh	Click this to update the license status from the www.myzyxel.com website.

33.3 The License Upgrade Screen

Use this screen to upgrade your Vantage Access license. Upgrading allows you to manage more devices.

Click **System Maintenance** > **License** and then click **Upgrade** to open the screen. The available fields vary depending on the license type you are currently using.

Figure 518 System Maintenance: License: Upgrade (Trial)

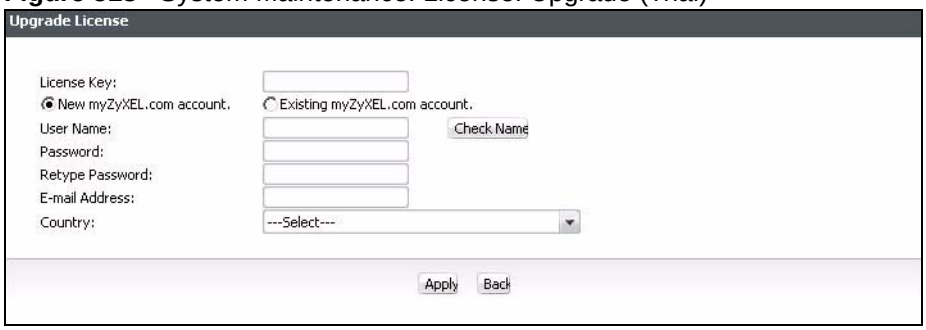


Figure 519 System Maintenance: License: Upgrade (Standard)

The following table describes the labels in this screen.

Table 318 System Maintenance: License: Upgrade

LABEL	DESCRIPTION
License Key	Enter the license key you were given by ZyXEL.
New myZyXEL.com account	Select this if you do not already have a myZyXEL.com username and password.
Existing myZyXEL.com account	Select this if you already have a myZyXEL.com username and password.
User Name	If you selected **Existing myZyXEL.com account**, enter your myZyXEL.com username. If you selected **New myZyXEL.com account**, Enter the username you want to use on myZyXEL.com. Click the **Check Name** button to make sure that your username is unique.
Password	If you selected **Existing myZyXEL.com account**, enter your myZyXEL.com password. If you selected **New myZyXEL.com account**, Enter the password you want to use on myZyXEL.com.
Retype Password	Enter your password again.
E-mail Address	If you selected **New myZyXEL.com account**, enter your E-mail address.
Country	If you selected **New myZyXEL.com account**, select the country in which you are located.
Apply	Click this to activate your license upgrade, and apply for your new myZyXEL.com account, if requested.
Back	Click this to return to the **License** screen.

34

System Setting

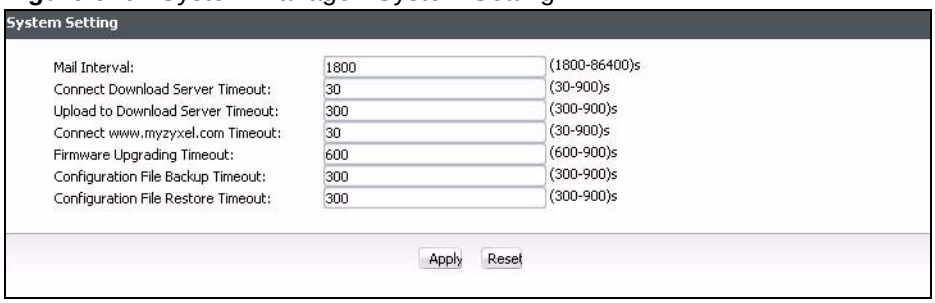
This chapter discusses the **System Manager** > **System Setting** screen.

34.1 The System Setting Screen

This screen allows you to configure time limits for a variety of features that require connection to an external server or managed devices.

Click **System Manager** > **System Setting**. The following screen displays.

Figure 520 System Manager: System Setting



The following table describes the labels in this screen.

Table 319 System Manager: System Setting

LABEL	DESCRIPTION
Mail Interval	Enter the maximum length of time Vantage Access waits to access the mail server.
Connect Download Server Timeout	Enter the maximum length of time Vantage Access waits to connect to the download server.
Upload to Download Server Timeout	Enter the maximum length of time Vantage Access waits to upload to the download server.
Connect to www.myzyxel.com Timeout	Enter the maximum length of time Vantage Access waits to access myzyxel.com.
Firmware Upgrading Timeout	Enter the maximum length of time Vantage Access waits to upgrade a device's firmware.
Configuration File Backup Timeout	Enter the maximum length of time Vantage Access waits to back up a configuration file.
Configuration File Restore Timeout	Enter the maximum length of time Vantage Access waits to restore a configuration file.

Table 319 System Manager: System Setting

LABEL	DESCRIPTION
Apply	Click this to save the changes you made in this screen.
Reset	Click this to return the fields in this screen to their last-saved values.

PART XII
Monitor Manager

This part contains the following chapters.

- Log Management (547)
- Alert Setting (555)

35

Log Management

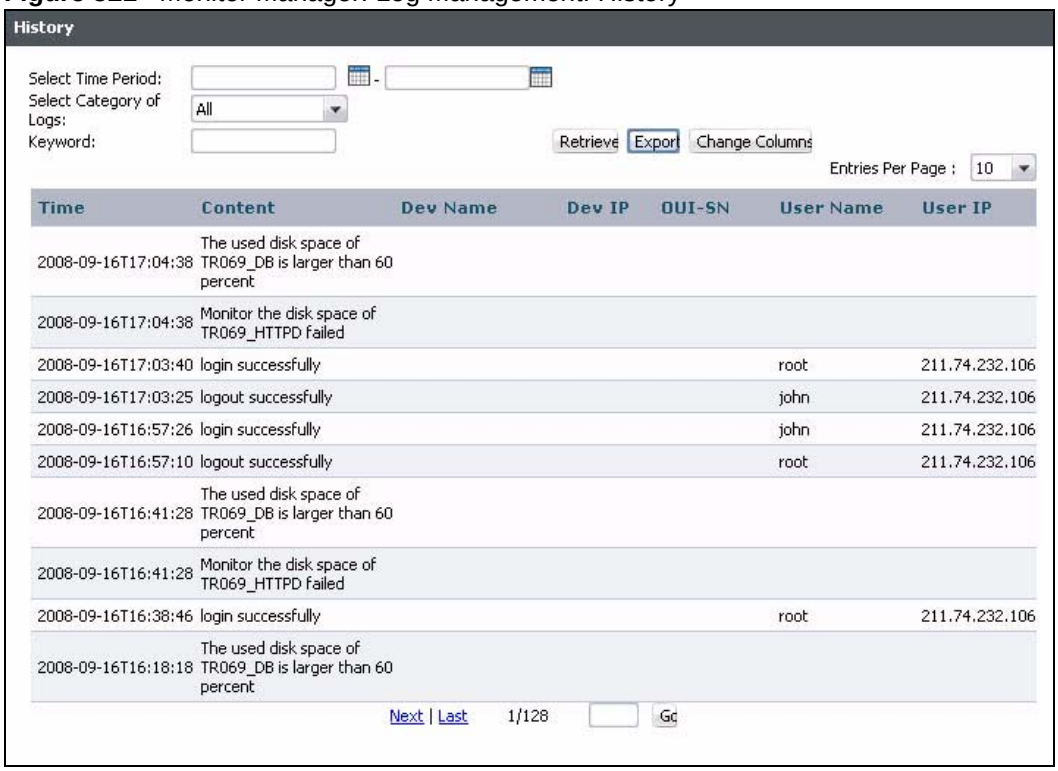
This chapter describes the **Monitor Manager > Log Management** screens. To view these screens, log into Vantage Access as root.

35.1 The History Screen

Use this screen to view Vantage Access logs of all types, search for sepcific types of log, and export log files.

Click **Monitor Manager > Log Management > History**. The following screen displays.

Figure 521 Monitor Manager: Log Management: History



The following table describes the labels in this screen

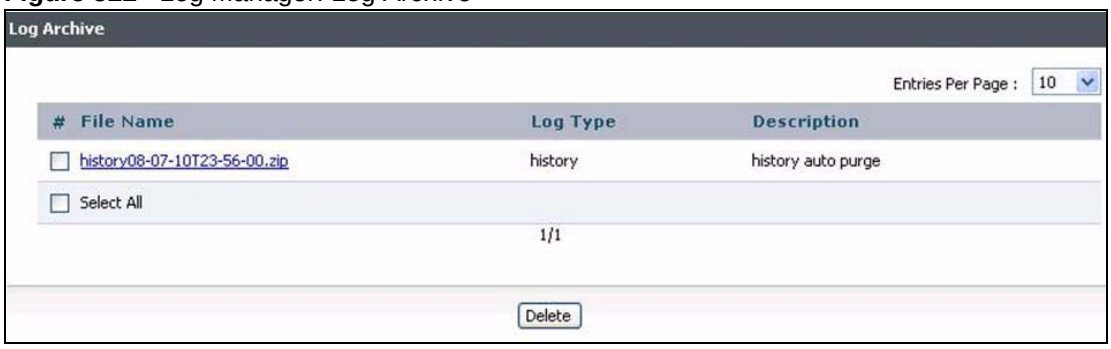
Table 320 Monitor Manager: Log Management: History

LABEL	DESCRIPTION
Select Time Period	Enter the start and end dates for the logs you want to see in the format: YYYY-MM-DD. Alternatively, click a calendar icon ( ) and select the date. The first calendar icon sets the start date, and the second calendar icon sets the end date.
Select category of logs	Select the type of logs to display or select **All** to display all logs.
Keyword	Enter a search term, if required. Vantage Access searches the **Content**, **Dev Name**, **OUI-SN**, **Dev IP**, **User Name** and **User IP** fields.
Retrieve	Click **Retrieve** to display the logs based on your search criteria.
Export	This button is available for the root or a manager account. Click this to save the results in this screen as a CSV file to your computer.
Change Columns	Click this to specify the columns you want to display in this screen. The **Change Columns** screen displays.
Entries Per Page	Select how many entries you want to display in a page.
Time	This field displays the time the log was created.
Content	This field displays the log message.
Dev Name	This field displays the device name.
Dev IP	This field displays the device's IP address.
OUI-SN	This field displays the device's Organizationally Unique Identifier (OUI) and serial number (SN).
User Name	This field displays the name of the user who made the change.
User IP	This field displays the IP address of the user who made the change.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number (1-9) and click **Go** to display the entries in that page.

35.2 The Log Archive Screen

Use this screen to download or delete logs saved on the download server. Click **Log Manager > Log Archive**. The following screen displays.

Figure 522 Log Manager: Log Archive



The following table describes the labels in this screen.

Table 321 Log Manager: Log Archive

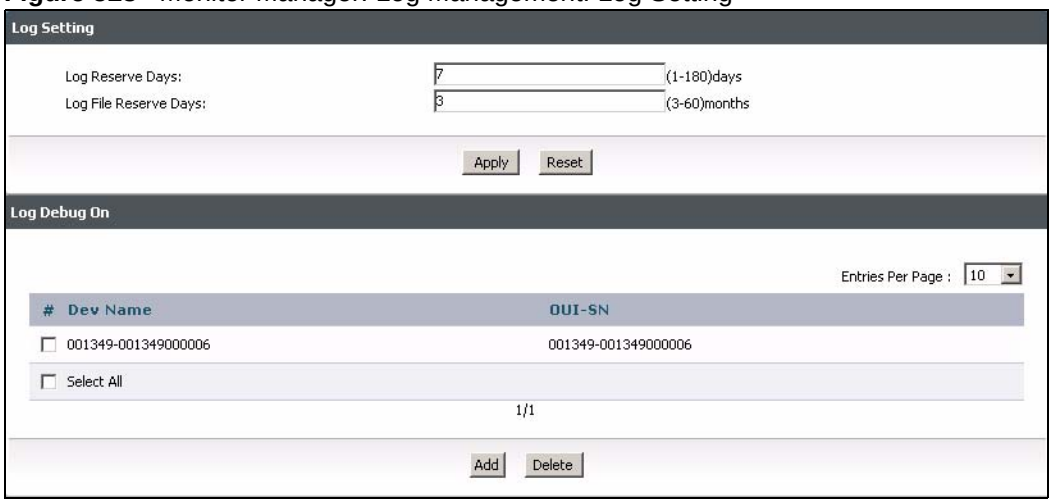
LABEL	DESCRIPTION
#	Select this option and click **Delete** to remove the log file(s) from the download server. Click **Select All** to select all entries in this screen.
File Name	This displays the name of the saved log file. Log files have a .zip extension. Click the name to download the log file to your computer.
Log Type	This field displays the type of saved log file.
Description	This field contains additional information about the saved log file.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number (1-9) and click **Go** to display the entries in that page.

35.3 The Log Settings Screen

Use this screen to configure how long Vantage Access holds log records in memory before archiving them, and how long it holds archive records before discarding them. You can also set up how often device debug logs are saved on Vantage Access.

Click **Monitor Manager** > **Log Management** > **Log Setting**. The following screen displays.

Figure 523 Monitor Manager: Log Management: Log Setting



The following table describes the labels in this screen.

Table 322 Monitor Manager: Log Management: Log Setting

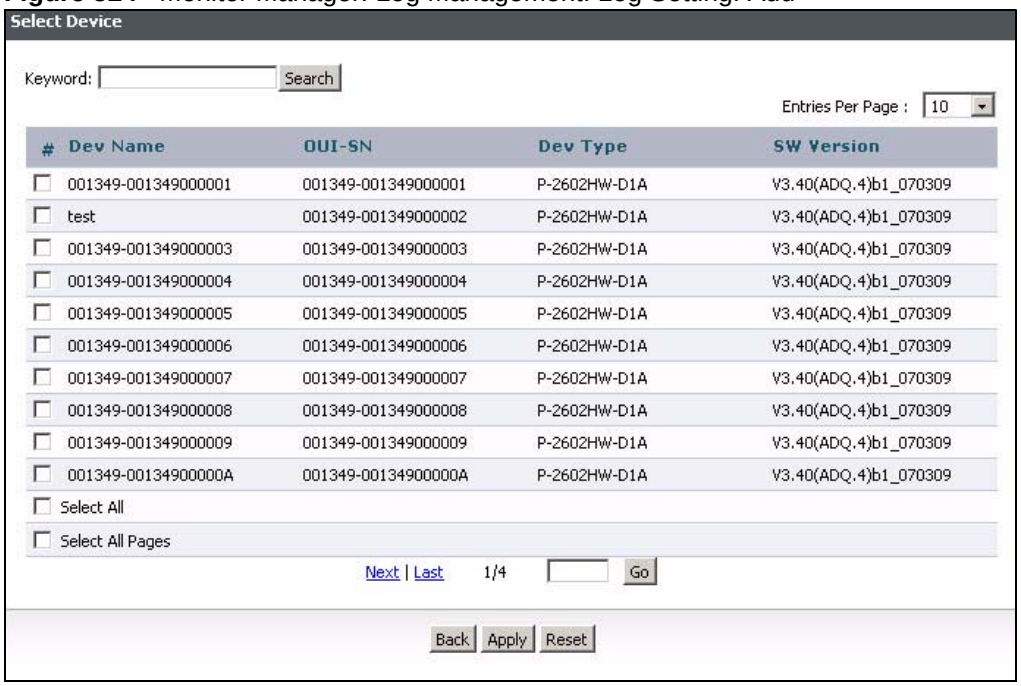
LABEL	DESCRIPTION
Log Setting	Use this section to configure how long logs and log archives are retained.
Log Reserve Days	Enter the number of days you want logs to remain in Vantage Access's database befure they are automatically compressed, archived to the download server, and removed from Vantage Access.
Log File Reserve Days	Select the number of months you want archives to remain on the download server before they are deleted.
Apply	Click this to save tthe settings in the **Log Setting** section of this screen.
Reset	Click this to return the settings in the Log Setting section of this screen to their last-saved vallues.
Log Debug On	Use this section to configure which managed devices have their debug logs saved on Vantage Access's database.
#	Select this option and click **Delete** to remove the device entry from this list. Click **Select All** to select all entries in this screen.
Entries Per Page	Select how many entries you want to display in a page.
Dev Name	This displays the name of the managed device.
OUI-SN	This displays the OUI and serial number of the managed device.
Add	Click this to add a managed device to the **Log Debug On** list. The **Select Device** screen displays.
Delete	Select a managed device and click this to remove the device from the **Log Debug On** list.

35.3.1 The Select Device Screen

Use this screen to add a managed device to the **Log Setting** screen's **Log Debug On** list. All devices on this list have their debug logs saved on Vantage Access's database.

Click **Monitor Manager** > **Log Management** > **Log Setting** > **Add**. The following screen displays.

Figure 524 Monitor Manager: Log Management: Log Setting: Add



The following table describes the labels in this screen.

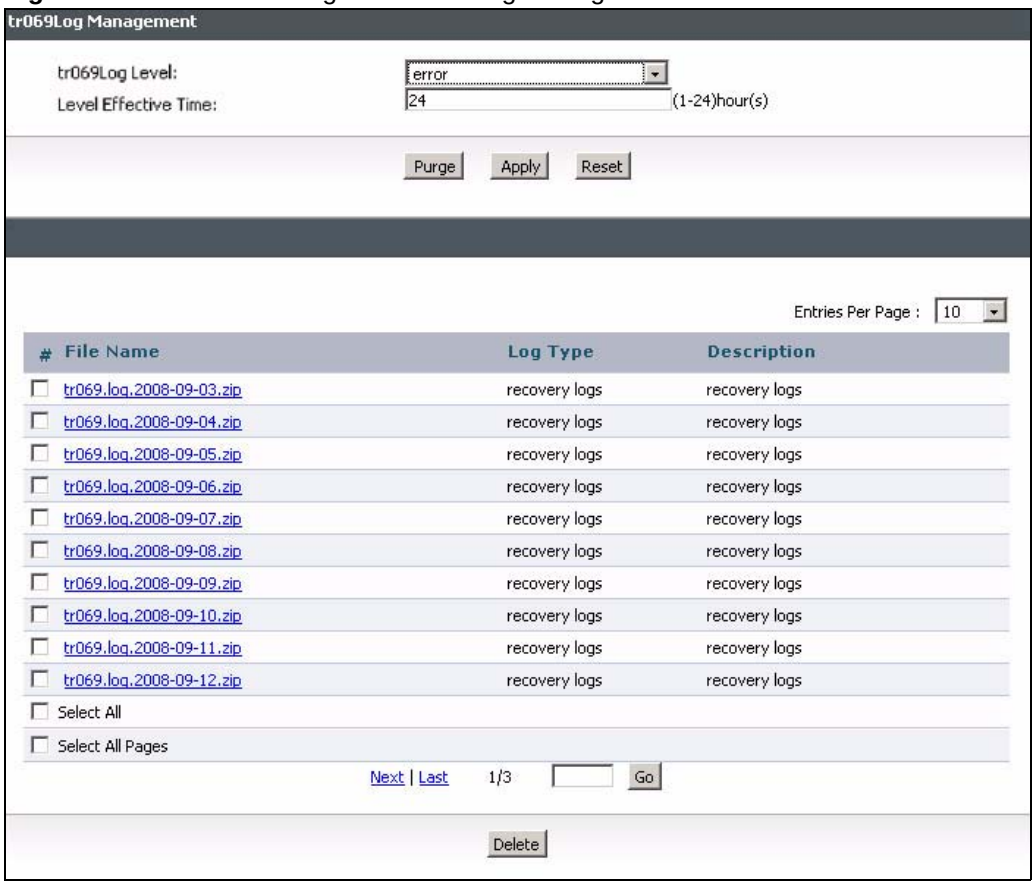
Table 323 Monitor Manager: Log Management: Log Setting: Add

LABEL	DESCRIPTION
Keyword	Enter a keyword (such as a device name or serial number) and click **Search** to display the related entries.
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Apply** to add the device (or devices) to the **Log Debug On** list. Click **Select All** to select all entries in this screen.
Dev Name	This field displays the device name.
OUI-SN	This field displays the Organization Unique Identifier (OUI) and the serial number of a device.
Dev Type	This field displays the device's model name.
SW Version	This field displays the firmware version the device is currently running.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number (1-9) and click **Go** to display the entries in that page.
Back	Click this to reuturn to the previous page without saving your settings.
Apply	Click this to add the selected device or devices to the **Log Debug On** list.
Reset	Click this to return the labels in this screen to their default values.

35.4 The TR-069 Log Management Screen

Use this screen to manage TR-069 logs. Click **Monitor Manager** > **tr069 Log Management**. The following screen displays.

Figure 525 Monitor Manager: TR-069 Log Management



The following table describes the labels in this screen.

Table 324 Monitor Manager: TR-069 Log Management

LABEL	DESCRIPTION
tr069Log Level	Select the TR-060 log level you want to see. The default value is **error**.
Level Effective Time	Enter the duration of the debug log in hours. The default is 24 hours.
Purge	Click this to purge the log manually.
Apply	Click this to save the changes in the **tr069Log Level** and **Debug Effective Time** fields.
Reset	Click this to return the **tr069Log Level** and **Debug Effective Time** fields to their last-saved values.
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the log file(s). Click **Select All** to select all entries in this screen.
File Name	This displays the TR-069 log file name. Click the name to download the file to your computer.
Log Type	This displays the type of TR-069 log.

Table 324 Monitor Manager: TR-069 Log Management

LABEL	DESCRIPTION
Description	This displays a description of the log.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number (1-9) and click **Go** to display the entries in that page.
Delete	Select log files and click this to remove the TR-069 log files.

36

Alert Setting

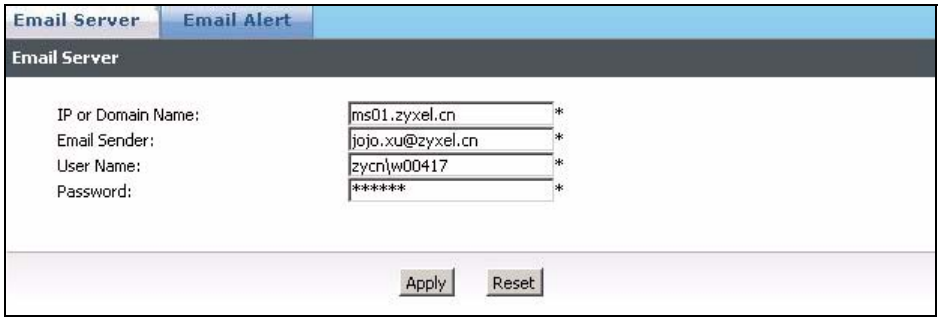
This chapter describes the **Email Server** and **Email Alert** screens you use to specify a mail server and the type of logs to send.

36.1 Specifying an Email Server

Use the **Email Server** screen to specify the e-mail account to which Vantage Access sends the logs and alerts.

Log into Vantage Access as root and click the **Monitor Manager** icon in the control panel. Then click **Alert Setting** > **Email Server** to display the configuration screen.

Figure 526 Monitor Manager: Alert Setting: Email Server



The following table describes the labels in this screen.

Table 325 Monitor Manager: Alert Setting: Email Server

LABEL	DESCRIPTION
Email Server	
IP or Domain Name	Enter the server name or the IP address of the mail server for the e-mail addresses specified below. If this field is left blank, logs and alert messages will not be sent via e-mail.
Email Sender	Enter the e-mail address that you want to be in the from/sender line of the log e-mail message that the Vantage Access sends. If you activate SMTP authentication, the e-mail address must be able to be authenticated by the mail server as well.
User Name	Enter the user name (up to 31 characters) (usually the user name of a mail account).
Password	Enter the password associated with the user name above.
Apply	Click **Apply** to save the changes.
Reset	Click **Reset** to start configuring this screen again.

36.2 Configuring Email Alert

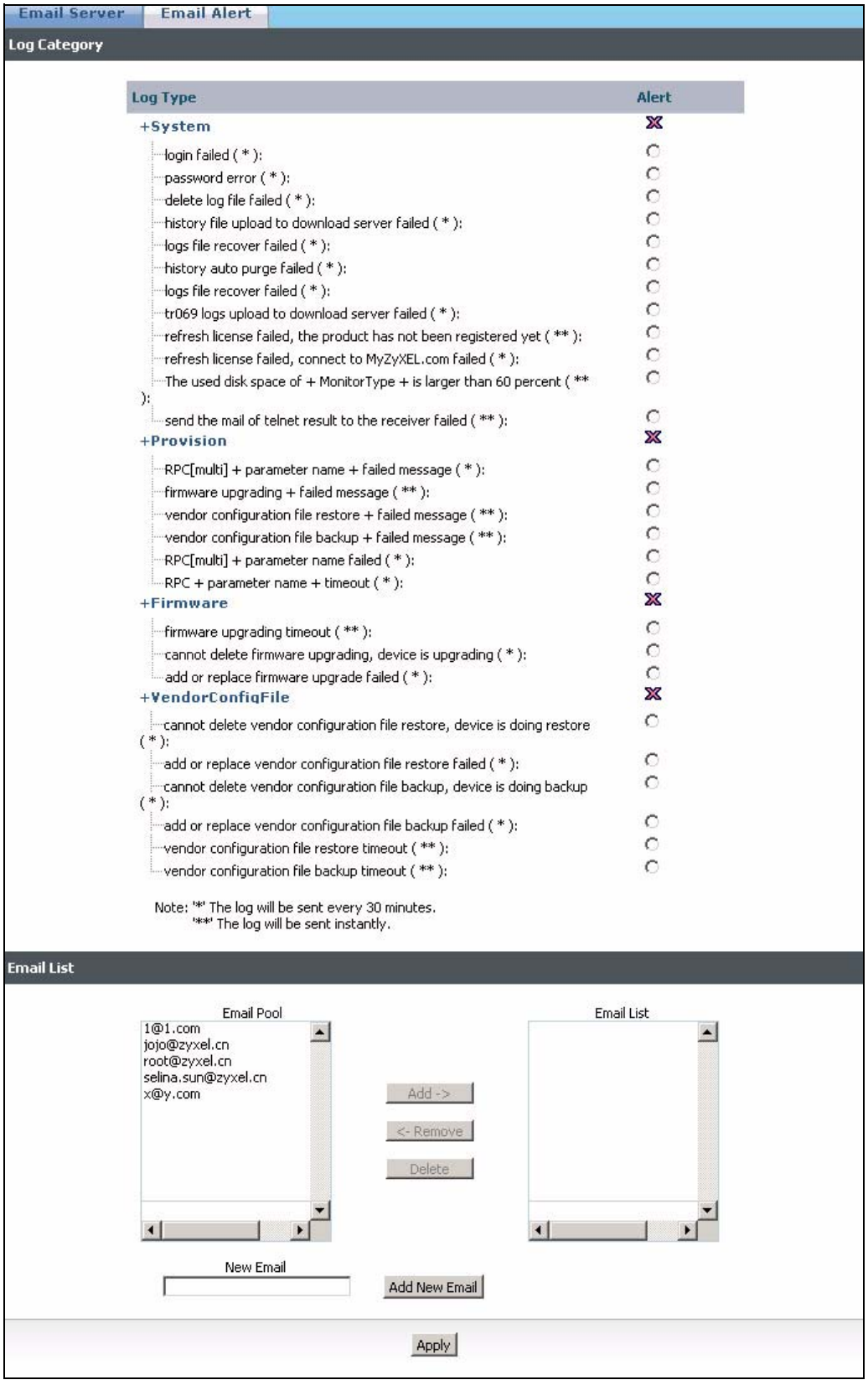
You must first use the **Email Server** screen to configure an email server which Vantage Access uses to send logs.

Use the **Email Alert** screen to specify which types of logs the Vantage Access server is to send. Depending upon the type of log, the Vantage Access server sends the alert email(s) immediately or every 30 minutes.

Follow the steps below to configure the **Email Alert** screen.

1. Log into Vantage Access as root and click the **Monitor Manager** icon in the control panel.
2. Click **Alert Setting** > **Email Alert** to display the configuration screen.

Figure 527 Monitor Manager: Alert Setting: Email Alert


Email Server
Email Alert
Log Category
Log Type
Alert
+System
login failed (*):
password error (*):
delete log file failed (*):
history file upload to download server failed (*):
logs file recover failed (*):
history auto purge failed (*):
logs file recover failed (*):
tr069 logs upload to download server failed (*):
refresh license failed, the product has not been registered yet (**):
refresh license failed, connect to MyZyXEL.com failed (*):
The used disk space of + MonitorType + is larger than 60 percent (**):
send the mail of telnet result to the receiver failed (**):
+Provision
RPC[multi] + parameter name + failed message (*):
firmware upgrading + failed message (**):
vendor configuration file restore + failed message (**):
vendor configuration file backup + failed message (**):
RPC[multi] + parameter name failed (*):
RPC + parameter name + timeout (*):
+Firmware
firmware upgrading timeout (**):
cannot delete firmware upgrading, device is upgrading (*):
add or replace firmware upgrade failed (*):
+VendorConfigFile
cannot delete vendor configuration file restore, device is doing restore (*):
add or replace vendor configuration file restore failed (*):
cannot delete vendor configuration file backup, device is doing backup (*):
add or replace vendor configuration file backup failed (*):
vendor configuration file restore timeout (**):
vendor configuration file backup timeout (**):
Note: '*' The log will be sent every 30 minutes.
'**' The log will be sent instantly.
Email List
Email Pool
1@1.com
jojo@zyxel.cn
root@zyxel.cn
selina.sun@zyxel.cn
x@y.com
Add ->
<- Remove
Delete
Email List
New Email
Add New Email
Apply

3 Click a category under **Log Type** and click the corresponding **Alert** button to select the log.
4 Specify one or more email addresses to which the Vantage Access sever sends email alerts. Select the email address(es) from the **Email Pool** box and click **Add ->**.

   To remove an email address, select the address in the **Email List** box and click **<- Remove**.

   To remove an email address from the **Email Pool** box, select the address and click **Delete**.

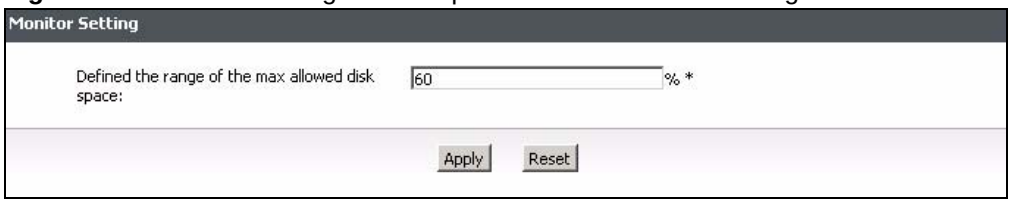
   To add a new email address, enter the address in the **New Email** field and click **Add New Email**. A new entry displays in the **Email Pool** box.
5 Click **Apply** to save the changes.

36.3 The Disk Space Monitor Screen

Use this screen to edit the maximum percentage of disk space that may be used.

Click **Monitor Manager** > **Disk Space Monitor** > **Monitor Setting**. The following screen displays.

Figure 528 Monitor Manager: Disk Space Monitor: Monitor Setting



The following table describes the labels in this screen.

Table 326 Monitor Manager: Disk Space Monitor: Monitor Setting

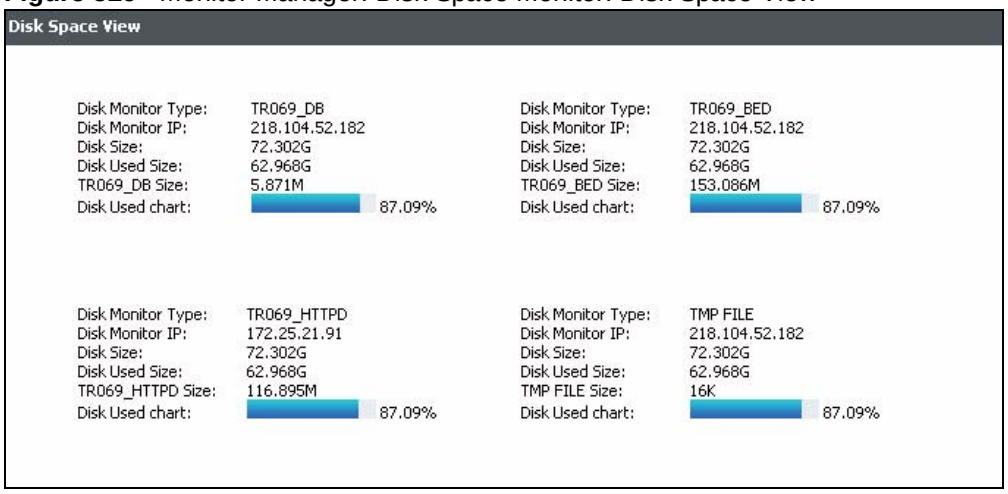
LABEL	DESCRIPTION
Define the range of the max allowed disk space	Enter the maximum percentage of the disk that may be used.
Apply	Click this to save your changes to the **Define the range of the max allowed disk space** field.
Reset	Click this to return the **Define the range of the max allowed disk space** field to its last-saved value.

36.4 The Disk Space View Screen

Use this screen to view statistics about the amount of disk space used by Vantage Access's components.

Click **Monitor Manager** > **Disk Space Monitor** > **Disk Space View**. The following screen displays.

Figure 529 Monitor Manager: Disk Space Monitor: Disk Space View



The following table describes the labels in this screen.

Table 327 Monitor Manager: Disk Space Monitor: Disk Space View

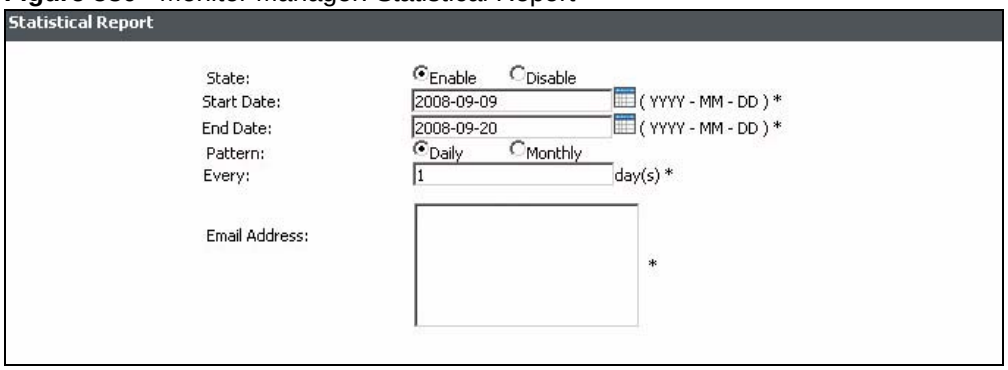
LABEL	DESCRIPTION
Disk Monitor Type	This displays the Vantage Access component name.
Disk Monitor IP	This displays the IP address of the Linux system which your database or BED is on.
Disk Size	This displays the total disk space.
Disk Used Size	This displays the amount of disk space currently in use.
TR069_DB Size	This displays the size of the TR-069 database.
TR069_BED Size	This displays the size of the TR-069 BED.
TR069_HTTPD Size	This displays the size of the TR-069 Hyper Text Transfer Protocol Daemon.
TMP FILE Size	This displays the size of all files in the temp directory.
Disk Used chart	This displays the percentage of the disk used by the specified component.

36.5 The Statistical Report Screen

Use this screen to configure the frequency and destination e-mail address of the statistical reports Vantage Access sends. These reports include information on the total number of devices, the number of registered devices, and the change in the total number of devices (and registered devices) in a given time period.

Click **Monitor Manager** > **Statistical Report**. The following screen displays.

Figure 530 Monitor Manager: Statistical Report



The following table describes the labels in this screen.

Table 328 Monitor Manager: Statistical Report

LABEL	DESCRIPTION
State	Select **Enable** to send statistical reports via email. Select **Disable** to not send statistical reports via email.
Start Date	Enter the date on which the report should start. Enter the date in yyyy-mm-dd format, or click the calendar icon and select the date.
End Date	Enter the date on which the report should end. Enter the date in yyyy-mm-dd format, or click the calendar icon and select the date.
Pattern	Select **Daily** to send reports every day. Select **Monthly** to send reports every month, on the day you specify in the **Every** field.
Every	If you selected **Monthly** in the **Pattern** field, enter the day of the month on which you want reports to be sent.
Email Address	Enter the email address (or addresses) to which the reports should be sent.

PART XIII
Diagnostics and Call Center

This part contains the following chapters.

- Diagnostic Manager (563)
- Call Center (571)

37

Diagnostic Manager

This chapter discusses the **Diagnostics Manager** screens. Use these screens to configure, schedule and perform a wide range of tasks on managed devices.

37.1 Telnet File Management

Use this screen to manage telnet files used for troubleshooting managed devices. These are CSV (Comma-Separated Value) files that contain a list of the IP addresses, usernames and passwords of the devices that recewive telnet commands. Click **Diagnostics Manager** > **Telnet** > **File Management**. The following screen displays.

Figure 531 Diagnostics Manager: Telnet: File Management

The following table describes the labels in this screen.

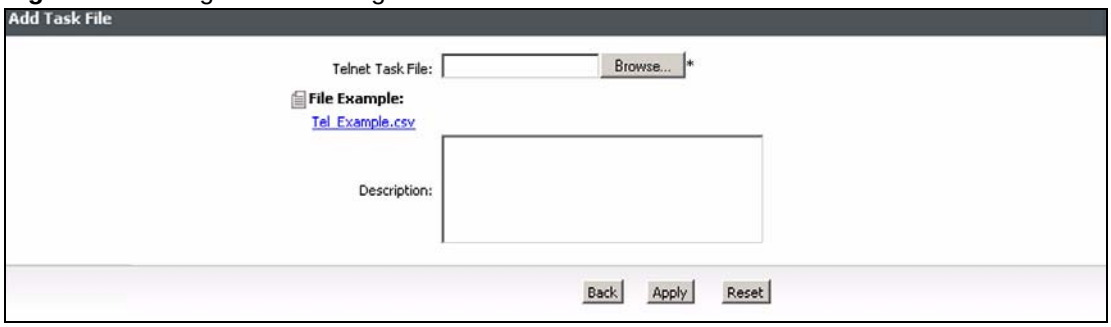
Table 329 Diagnostics Manager: Telnet: File Management

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the telnet file(s). Click **Select All** to select all entries in this screen.
Task file name	This is the telnet file name.
Description	This is a short description of the telnet file.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that screen.
Add	Click this to add a telnet file to the list.
Delete	Click **Delete** to remove the selected file(s).

37.1.1 Adding a Telnet File

Use this screen to add a telnet task file to the telnet file list. Click **Add** in the **Diagnostics Manager** > **Telnet** > **File Management** screen. The following screen displays.

Figure 532 Diagnostics Manager: Telnet: Add File



The following table describes the labels in this screen.

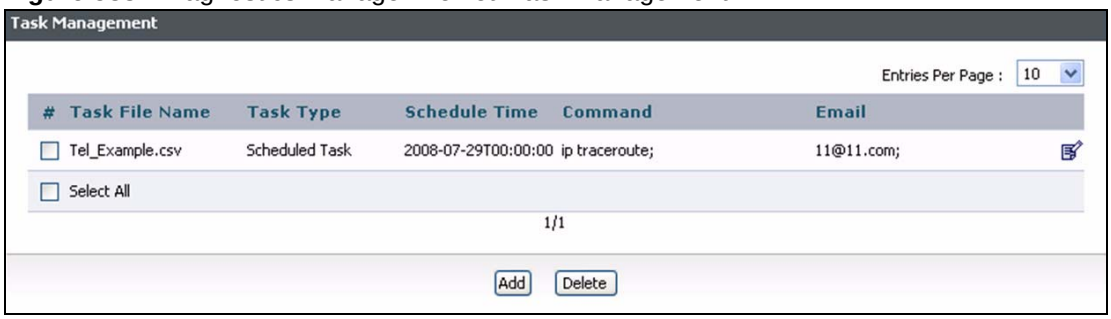
Table 330 Diagnostics Manager: Telnet: Add File

LABEL	DESCRIPTION
Telnet Task File	Enter the file path of the telnet command file to upload, or click **Browse...** to select the file to upload.
File Example	Click the link to download an example of the telnet command CSV (Comma-Separated Value) file.
Description	Enter a description of the file.
Back	Click this to return to the previous page without uploading a file.
Apply	Click this to upload the file and return to the previous page.
Cancel	Click this to clear all fields in this screen.

37.2 Task Management

Use this page to view, edit or delete scheduled, immediate or recurrent telnet tasks. Click **Diagnostics Manager** > **Telnet** > **Task Management**. The following screen displays.

Figure 533 Diagnostics Manager: Telnet: Task Management



The following table describes the labels in this screen.

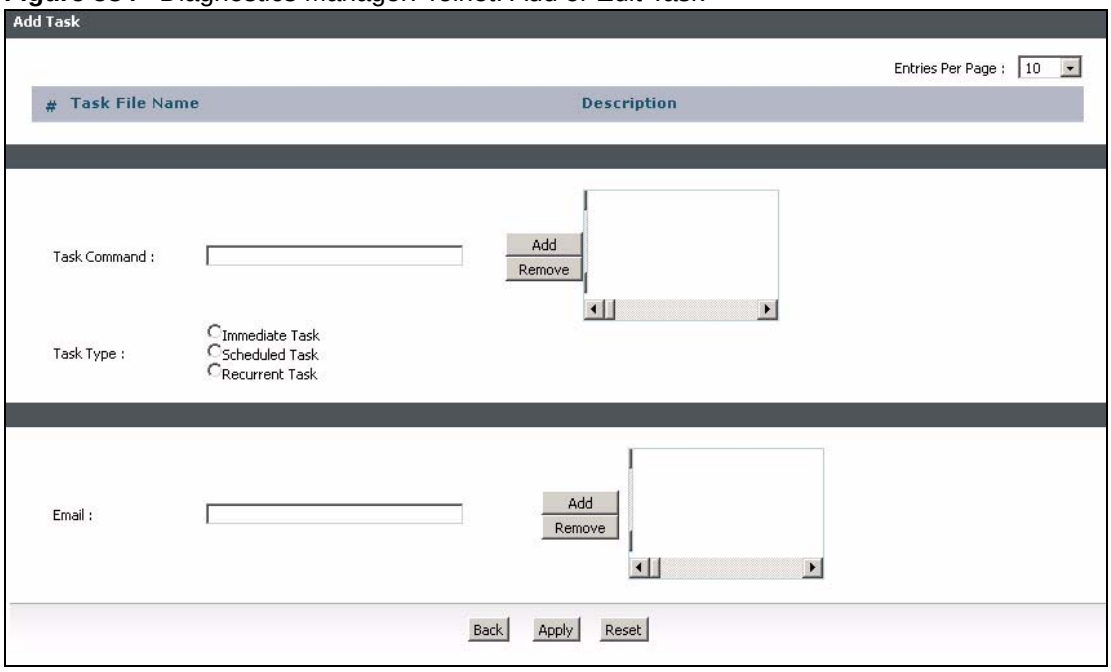
Table 331 Diagnostics Manager: Telnet: Task Management

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the task(s). Click **Select All** to select all entries in this screen.
Task File Name	This displays the name of the telnet task file used for this task.
Task Type	This displays **Immedate Task** for a task that is currently in progress, **Scheduled Task** for a task to be performed once at a specified point in the future, or **Recurrent Task** for a regularly-scheduled task.
Schedule Time	This displays the time at which the task is scheduled to take place.
Command	This displays the commands the task uses.
Email	This displays the e-mail address (or addresses) to which a confirmation notice will be sent once the task is complete.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that screen.
Add	Click this to add a scheduled task to the list.
Delete	Click **Delete** to remove the selected task(s).

37.2.1 Adding or Editing a Task

Use this screen to add a task to the **Task Management** list, based on a task file you already uploaded. Click **Diagnostics Manager** > **Telnet** > **Task Management**, then click **Add** or **Edit**. The following screen displays.

Figure 534 Diagnostics Manager: Telnet: Add or Edit Task



The following table describes the labels in this screen.

Table 332 Diagnostics Manager: Telnet: Add or Edit Task

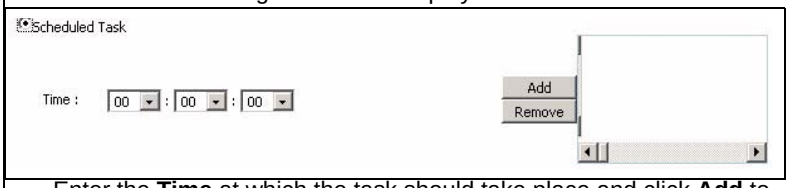
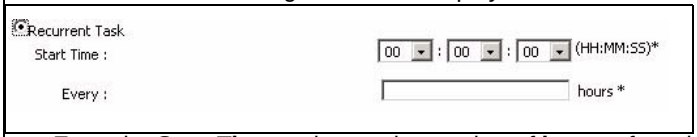
LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select the task file you want to use.
Task File Name	This displays the name of the telnet task file.
Description	This displays a description of the telnet task file.
Task Command	Enter a new command (maximum 80 characters) and click **Add** to include it in the list. Select a command in the list and click **Remove** to delete it from the list.
Task Type	• Select **Immediate Task** to perform the task immediately. • Select **Scheduled Task** to perform the task at a specified point in the future. The following extra fields display.  Enter the **Time** at which the task should take place and click **Add** to include it in the list. Select a time in the list and click **Remove** to delete it. Add more times to the list if required. • Select **Recurrent Task** to perform the task at specified regular intervals. The following extra fields display.  Enter the **Start Time** and enter the number of **hours** after which the task should repeat.

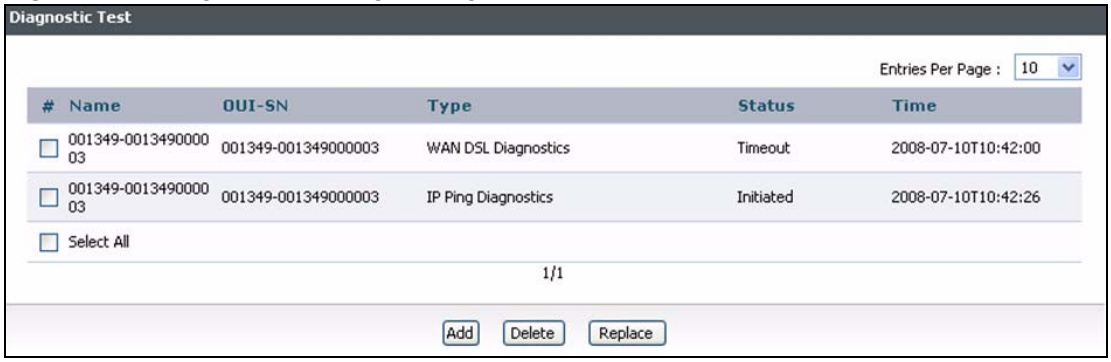
Table 332 Diagnostics Manager: Telnet: Add or Edit Task

LABEL	DESCRIPTION
Email	Enter an email address and click **Add** to include it in the list. Addresses in the list receive an email when the task is completed. Select an address in the list and click **Remove** to delete it from the list.
Back	Click this to return to the previous page without saving any changes.
Apply	Click this to save your changes and return to the previous page.
Cancel	Click this to return in this screen to their last-saved values.

37.3 Diagnostic Tests

Use this screen to view and manage scheduled diagnostic tests. Click **Diagnostics Manager** > **Diagnostic Test**. The following screen displays.

Figure 535 Diagnostics Manager: Diagnostic Tests



The following table describes the labels in this screen.

Table 333 Diagnostics Manager: Diagnostic Tests

LABEL	DESCRIPTION
Entries Per Page	Select how many entries you want to display in a page.
#	Select this option and click **Delete** to remove the test(s). Click **Select All** to select all entries in this screen.
Name	This displays the name of the managed device to be tested.
OUI-SN	This displays the OUI and serial number of the managed device to be tested.
Type	This displays the type of test to be performed.
Status	This displays the current status of the diagnostic test (**Initiated**, **Timeout** or **Finished**).
Time	This displays the time at which the diagnostic test was added.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.

Table 333 Diagnostics Manager: Diagnostic Tests

LABEL	DESCRIPTION
Go	Enter a page number and click **Go** to display the entries in that screen.
Add	Click this to add a diagnostic test to the list.
Delete	Click **Delete** to remove the selected file(s).
Replace	Click this to replace the selected diagnostic test.

37.3.1 Adding a Diagnostic Test

Use this screen to add a diagnostic test to the list. Click **Add** in the **Diagnostics Manager** > **Diagnostic Tests** screen. The following screen displays.

Figure 536 Diagnostics Manager: Diagnostic Tests: Add

The following table describes the labels in this screen.

Table 334 Diagnostics Manager: Diagnostic Tests: Add

LABEL	DESCRIPTION
Keyword	Enter a search term and click **Search** to find matching devices.
#	Select the device upon which to perform the selected diagnostic test.
Name	This displays the device name.
OUI-SN	This displays the device's OUI and serial number.
Type	This displays the device's model number.
SW Version	This displays information about the firmware the device is using.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that screen.

Table 334 Diagnostics Manager: Diagnostic Tests: Add

LABEL	DESCRIPTION
Diagnostics Type	Select the type of test you want to run on the selected device. • **IP Ping Diagnostics**: select this to run a ping test on the device's WAN. • **WAN DSL Diagnostics**: select this to run a test on the device's DSL connection. • **WAN ATM F5 Loopback Diagnostics**: select this to run a loopback diagnostic (ping) test result on the ATM later. • **LAN IP Ping Diagnostics**: select this to run a ping test on the device's LAN. Test-specific information displays below. • **DiagnosticsState** or **LoopDiagnosticsState**: this field is read-only and displays **Requested**. • **Interface**: enter the interface to test. • **Host**: enter an IP address or hostname to test. • **NumberOfRepetitions**: enter the number of times Vantage Access should repeat the test. • **Timeout**: enter the number of seconds Vantage Access waits before cancelling the test. • **DataBlockSize**: • **DSCP**: Enter the DiffServ Control Point value (0~64) for this test.
Back	Click this to return to the previous screen.

38

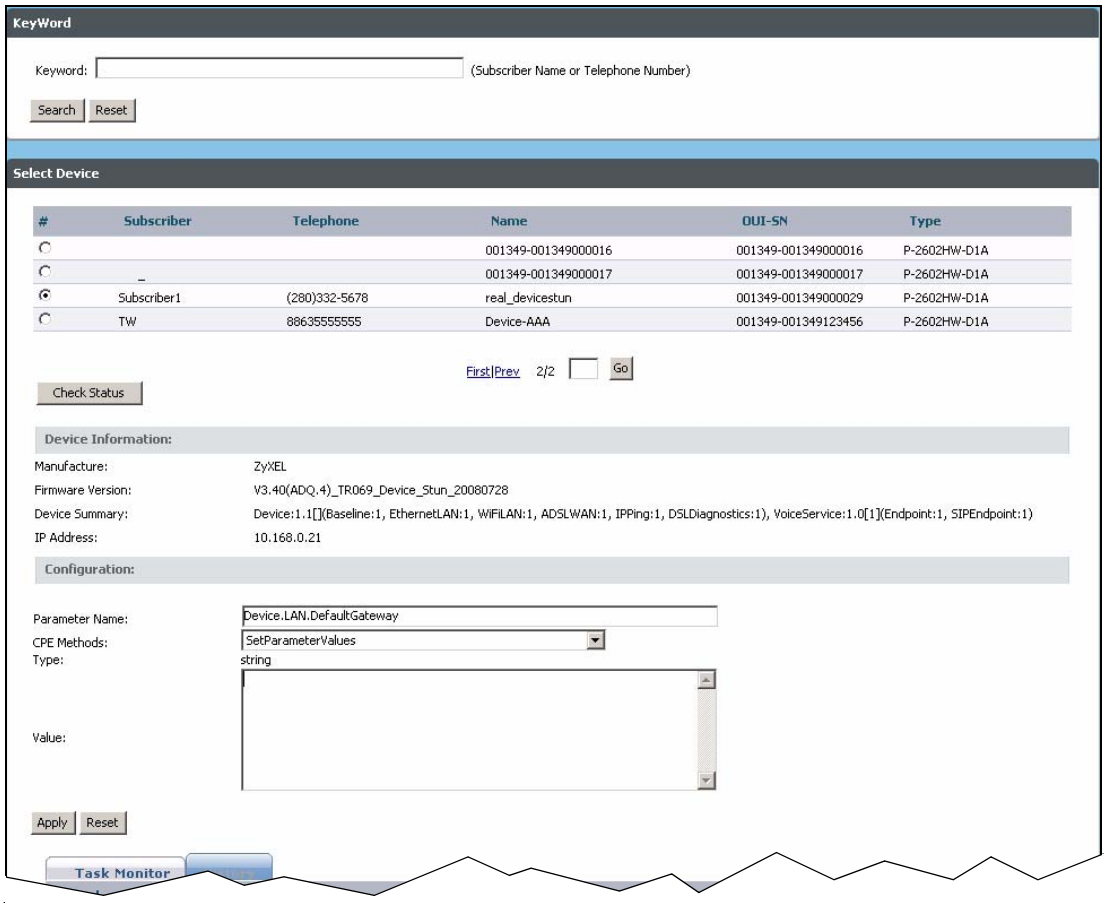
Call Center

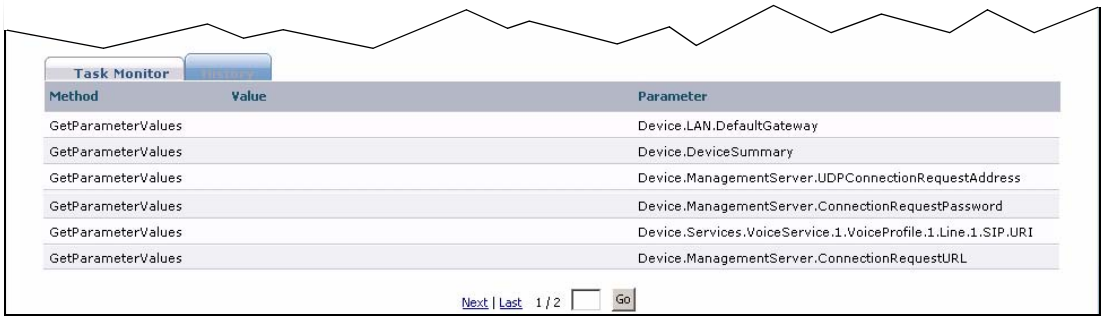
This chapter discusses the **Call Center** screen. This screen is helpful for your call center operations. For example, checking a device's information or status, modifying some basic settings, or checking historical event logs for subscribers.

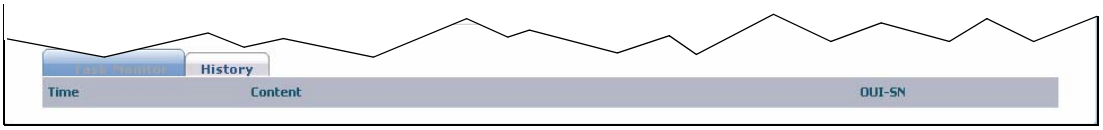
38.1 The Call Center Screen

Use this screen to search for device(s) and view their information for your call center operations. You can also use this screen to configure actions applied to the CPE devices (using CPE methods) and view historic logs. Log into the Web Configuration using a call-center account. The following screen displays.

Figure 537 The Call Center Interface







The following table describes the labels in this screen.

Table 335 The Call Center Interface

LABEL	DESCRIPTION
Keyword	
Keyword	Enter a search term, if required. Vantage Access searches the **Subscriber Name** and **Telephone Number** fields. Leave this field blank and click **Search** to search all devices (registered and unregistered) in Vantage Access.
Search	Click this to start the search.
Reset	Click this to reset the **Keyword** field in this section.
Select Device	
#	Select this option and click **Check Status** to check whether the device is on-line or off-line.
Subscriber	This field displays the descriptive name for the subscriber user.
Telephone	This field displays the phone number used to contact the subscriber.
Name	This field displays the descriptive name of the device.
OUI-SN	This field displays the Organization Unique Identifier (OUI) and the serial number of the device.
Type	This field displays the model of the device.
Next	Click **Next** to go to the next screen.
First	This link is not available in the first screen. Click **First** to return to the first screen.
Prev	Click **Prev** to go to the previous screen.
Last	This link is not available in the last screen. Click **Last** to go to the last screen.
Go	Enter a page number and click **Go** to display the entries in that screen.
Check Status	Select a device and click this to check whether the device is on-line or off-line.
Device Information When you select a device, this section displays the device's related information.	
Manufacture	This field displays the name of the company that produced this device.

Table 335 The Call Center Interface

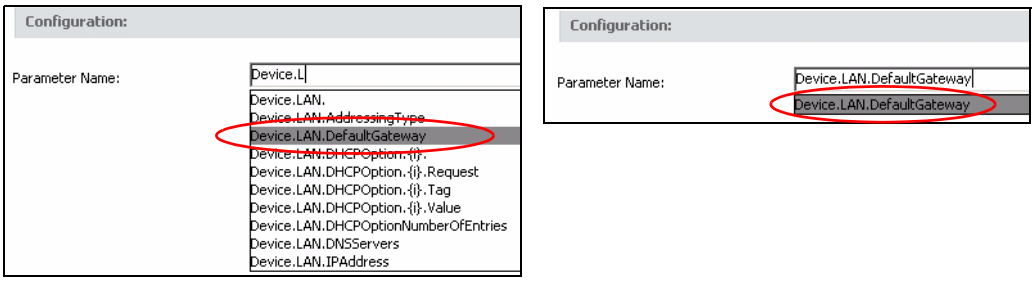
LABEL	DESCRIPTION
Firmware Version	This field displays the device firmware version number.
Device Summary	This field displays the configuration template this device is currently using.
IP Address	This field displays the IP address of this device.
Configuration	
Parameter Name	Enter a full and valid parameter name. You can refer to the names shown in the **Parameter** column when you select the **Task Monitor** tab below.
CPE Methods	This field is available when you enter a valid parameter name in the **Parameter Name** field. Select one of the following CPE methods, its additional settings appear. **SetParameterValues**: select this to change the parameter value on the device. **GetParameterValues**: select this to obtain parameter information from the device. **GetParameterNames**: select this to obtain the parameter name(s) on the device. **SetParameterAttribute**: select this to change the parameter settings on the device. **GetParameterAttribute**: select this to obtain parameter information from the device.
Type	This field is available when you select **SetParameterValues** in the **CPE Methods** field. This field displays the type of characters you can enter for the parameter value in the field below.
Value	This field is available when you select **SetParameterValues** in the **CPE Methods** field. This field displays the value for the parameter.
Attribute	This field is available when you select **SetParameterAttributes** in the **CPE Methods** field. Select **Active Notification** to set the device to send a notification message to the Vantage Access server immediately when the value(s) of the parameter(s) is changed. Select **Notification Off** to set the device not to return a notification when the value(s) of the parameter(s) is changed. Select **Passive Notification** to set the device to send a notification message to the Vantage Access server in the next session when the value(s) of the parameter(s) is changed.
Apply	Click **Apply** to save the changes.
Reset	Click **Reset** to start configuring this screen again.
Task Monitor Use this section to view all avaiable CPE methods on the device.	
Method	This field displays the name of a CPE method.
Value	This field displays the value of a parameter.
Parameter	This field displays the name of the parameter.
History Use this section to view all historical event logs on the device.	
Time	This field displays the date and time when an event was recorded.
Content	This field displays the description of the event.
OUI-SN	This field displays the Organization Unique Identifier (OUI) and the serial number of the device this event is related to.

38.1.1 Default Gateway Setting Example

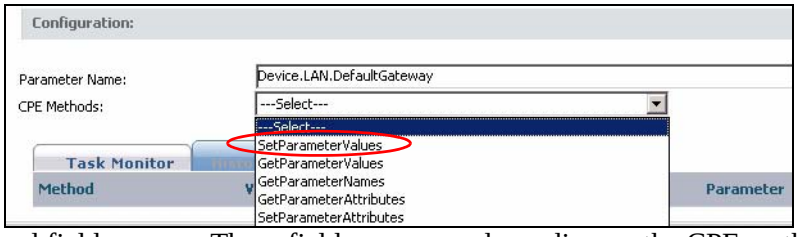
Follow the steps below to configure a CPE method, **Device.LAN.DefaultGateway** , using a call center account.

1 Enter the beginning charactors of a parameter name in the **Parameter Name** field. For example, "**Device.L**". The matching parameters appear in the list.

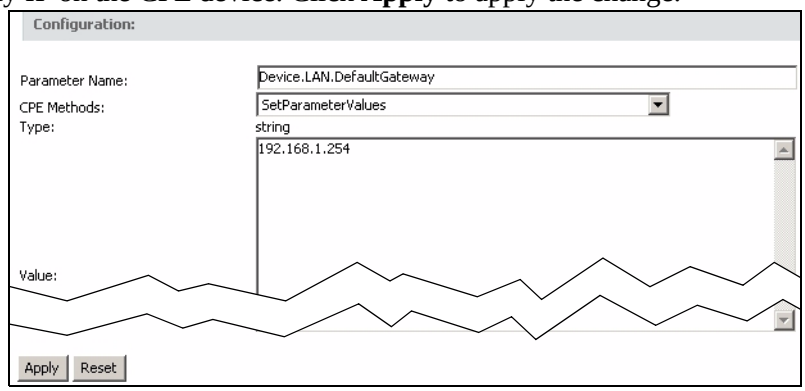
You can also enter a full parameter name or copy and paste a parameter name from the **Task Monitor** section of this screen. Select the parameter you want to configure.



2 The **CPE Method** field appears. Select the method you want to configure, such as **SetParameterValues** in this example.



3 Additional fields appear. These fields may vary depending on the CPE method you selected. Configure them. For example, enter **192.168.1.254** to change the LAN default gateway IP on the CPE device. Click **Apply** to apply the change.



PART XIV
Troubleshooting, Appendices and Index

This part contains the following chapters.

- Troubleshooting (577)
- Product Specifications (579)
- Legal Information (581)
- Customer Support (609)
- Index (615)

39

Troubleshooting

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

39.1 Vantage Access Startup and Login

I cannot start Vantage Access.

1. You must reboot your computer after installing Vantage Access.
2. Make sure Vantage Access DB has started.
3. If the "`Error: Remote DB is not alive!`" message displays, this means that you have specified the wrong Vantage Access DB server IP address. Uninstall and install Vantage Access BED with the correct IP address.
4. Make sure you can connect to Vantage Access DB.
5. You may have specified the wrong Vantage Access DB server IP address during the Vantage Access BED installation. In this case, uninstall and install Vantage Access BED and enter the correct IP address during the installation process.

I cannot display the Vantage Access login screen.

1. This may happen if you have installed the Apache server with your Linux distribution. You must uninstall the existing Apache HTTP download server from your Linux computer.
2. If you installed Vantage Access BED and Vantage Access HTTPD on the same computer, uninstall and install Vantage Access HTTPD is using a different port number other than 80.

I cannot log into Vantage Access.

1. Make sure the Vantage Access server is turned on.

2 Make sure you have started Vantage Access on the server.
3 Make sure you enter the correct IP address of the Vantage Access server.
4 The default user name is “root” and the default password is “root”. They are case-sensitive.
5 If you enter the wrong password three times for a user name, you have to wait for 10 minutes before Vantage Access allows you to log in again with the same user name.

39.2 Web Configurator Display

My web browser does not display the screen properly.

1 Display the screens using only the supported web browser (Internet Explorer version 6.0). Refer to Section 3.1 on page 75.
2 Make sure you have Macromedia Flash plug-in installed properly.
3 It is recommended you use a monitor with a screen resolution set to 1024 by 768 pixels.

39.3 Device Registration

I cannot see my device in Vantage Access.

1 Make sure you have first imported an XML file containing basic device information to Vantage Access. See Section 4.2 on page 94.
2 Make sure you have properly set and activated TR-069/TR-104 management on the device. See Section 4.2.4 on page 96.
3 The initial device discovery process may take up to three minutes depending on your network condition.

A

Product Specifications

All values are accurate at the time of writing.

Table 336 License Specifications

FEATURE	SPECIFICATION
License registration website	http://www.myZyXEL.com
License Type	The number of registered devices you can configure depends on the your iCard. The license can include 100, 1,000, 5,000, 10,000, 50,000 or 100,000 devices. You can increase the device number by registering license keys one by one. For example, if you want to manage 6,300 devices, you could purchase one iCard for 5,000 devices, one for 1,000 devices, and three for 100 devices.
Maximum device management capability	200,000

B

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- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

"+" is the (prefix) number you dial to make an international telephone call.

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